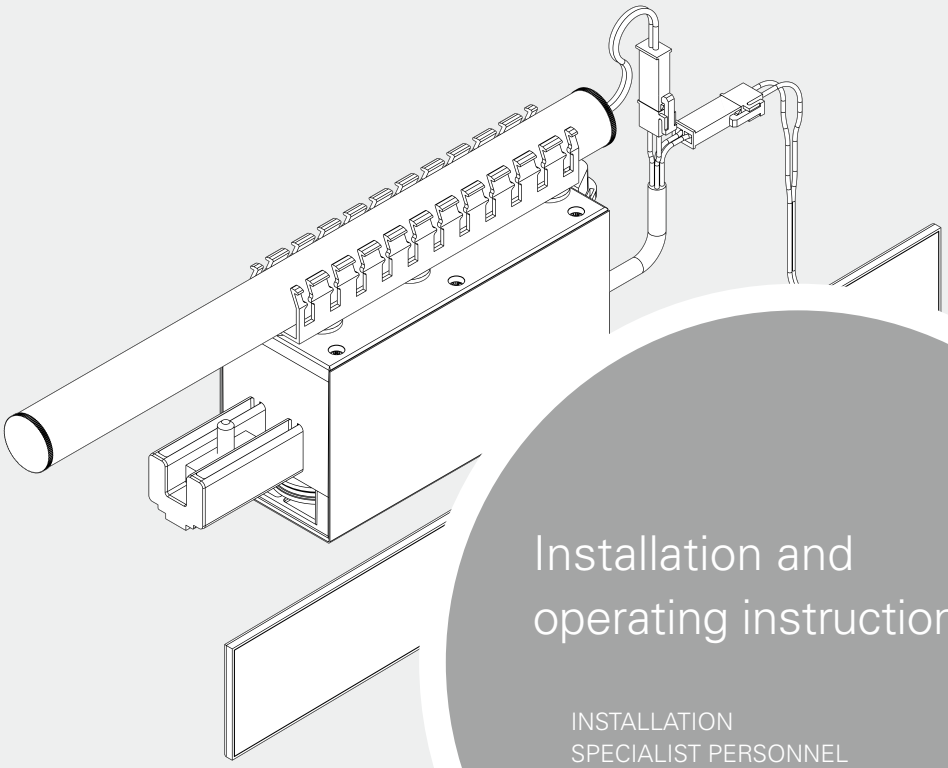
EHRET

VOLETRONIC Solar 12 V

Motorisation for sliding shutters
Wireless remote control



Installation and operating instructions

INSTALLATION
SPECIALIST PERSONNEL
Valid from 01.2013

E 625.3 | 380027

Notes

The present Installation & operating instructions describe the installation and commissioning of EHRET sliding shutters with VOLETRONIC Solar 12 V sliding shutter control.

These Installation & operating instructions are a component part of the product and are therefore always to be retained until the product is disposed of.

These Installation & operating instructions are to be passed along in the event of the sale of this product.

These instructions are addressed to qualified specialist personnel. Qualified specialist personnel are persons who are familiar with the transport, setup, installation, commissioning and operation of the product and who have appropriate qualifications for their work. Specialist personnel must know and observe the relevant standards and/or guidelines.

This product is in accordance with general rules of technology. Safety-conscious behaviour is necessary for undertaking safe commissioning. For this reason, observe the following notes.

Carefully read through these instructions prior to commissioning. Observe the specified process steps and take into account the notes and recommendations given. Knowledge of and technically impeccable implementation of the given safety notes and warnings are prerequisite for safe and proper operation of the sliding shutters. Insufficient knowledge at the time of commissioning and utilisation lead to the loss of any liability claims against EHRET GmbH.

Should you not understand something in these Installation & operating instructions unambiguously, do not fail to contact the specialist personnel at EHRET GmbH, 77972 Mahlberg (Germany).

Bore hole sizes and fastening material are recommendations; these could vary because of the substrate!

Contents

Explanation of signs and symbols

Symbol	Explanation
	**DANGER** Designates an immediately pending danger that could lead to death or severe injuries if the respective precautionary measures are not implemented.
	**WARNING** Means that death, severe bodily injury or major property damage could occur if the respective precautionary measures are not implemented.
	**CAUTION** Means a possibly pending danger that could lead to minor injuries or property damage if it is not avoided.
	Directives for action

Important safety notes

➔ **Only qualified specialist personnel may carry out installation and commissioning!**

WARNING
Incorrect installation could lead to severe injuries and/or damage to property. All installation instructions are to be followed.

WARNING
Take into account the following notes and warnings in order to avoid dangers and to protect the product.

- ➔ Observe the accident prevention regulations of the Accident Prevention & Insurance Association.
- ➔ Observe the rules of the road during transport.
- ➔ Make sure that the load is well-secured on the means of transport.
- ➔ Take care to ensure that the drives are stored under dry conditions prior to final installation and commissioning.
- ➔ Cordon off a generously large area around the installation site.
- ➔ Observe without limitation the regulations of the manufacturers of dowel and attachment materials.
- ➔ The mounting bases of the installation site are to be checked for load-bearing capacity prior to installation.
- ➔ In the event of uncertainties about the mounting bases, contact your responsible building experts.
- ➔ Electrical work may be carried out only by authorised electricians.
- ➔ The specified connection diagrams are to be observed, as otherwise damage to the motor could occur. EHRET GmbH assumes no liability for damage resulting from incorrect installation.

- Check the product for damage prior to installation. Products requiring repair may not be used.
- Do not touch any internal parts of the product that become exposed as the result of damage (e. g. electrical cables/lines).
- Discontinue operation of your electrical drive at once in the event of smoke or fumes.
- Do not allow children to play with the operating apparatus of the sliding shutter drives.
- Electrical/electronic devices are not secure against failure. Make sure that no hazardous situations for personnel or product could arise in the event of a power failure.
- Devices with electrical controls could go into motion at any time and without warning. Prevent situations hazardous to personnel and product that arise from this fact.
- No personnel or obstacles are permitted to be within the range of pivoting and/or travelling shutters in normal operation. Keep personnel and objects away until the shutters have reached their final position.
- Do not reach into moving parts or closing areas while shutters are opening or closing.
- Make sure that no articles of clothing or body parts are able to be caught by moving parts in the system.
- Disconnect the drives from the battery during maintenance work.
- Ice could form on the product in the event of snowfall, sleet or icy rain. Do not operate equipment until the ice formation is no longer present, and switch automatic controls to manual.
- Make sure that the shutters are locked before any wind load occurs.
- The shutters may not be operated at wind speeds from 62 km/h (stormy wind).
- No additional loads such as persons or objects are permitted to have an effect on the shutters.
- Shutters are not intended to protect individuals from falls.

WARNING

Danger of injury from the weight of the product!
Due to the weight of the product, we recommend that transport and installation be performed by at least two individuals.

→ Transport the product carefully in order to avoid damage.

→ Take care to ensure that the product is not damaged when the packaging material is removed.

DANGER

There is a danger of suffocation from the packaging foil included in the delivery.
The packaging foil must be kept out of reach of children.
Store the foil carefully until you turn it in for recycling.

→ Turn the packaging materials in for recycling.

Incorrect operation

Correct operation can no longer be ensured if the position of the sliding shutter is moved by hand quickly and with great force, and not by means of operation with the OPEN or CLOSE button. In such cases, a force may be applied to the sliding shutter in such a way that the current mechanical position of the sliding shutter no longer matches the position indicated on the control.

This leads to incorrect information within the control, as a result of which the control will no longer function correctly. This condition is rectified as a rule by running the shutter up and down again.

CE EC Declaration of Conformity

The manufacturer:	EHRET GmbH Aluminium Shutters Bahnhofstrasse 14 - 18 D - 77972 Mahlberg

declares that the product: **EHRET VOLETRONIC Solar 12 V sliding shutter drive**

to which this guideline refers, is in conformance with the stipulations of

Guideline 1999/05/EC	Radio and telecommunications terminal equipment

as well as with the following standards:

EN 301 489-3:2000	Electromagnetic compatibility and radio spectrum matters (ERM), Electromagnetic compatibility (EMC) standard for radio equipment and services – Part 3: Specific conditions for short-range devices (SRD) operating on frequencies between 9 kHz and 40 GHz
EN 300 220-3:2000	Electromagnetic compatibility and radio spectrum Matters (ERM); Short range devices (SRD) radio equipment to be used in the 25 MHz to 1000 MHz frequency range with power levels ranging up to 500 mW – Part 3: Harmonized EN covering essential requirements under Article 3.2 of the R&TTE Directive
98/37/EC	Machinery Directive
EN 73/23/EEC	Low Voltage Directive
EN 60730 + A1 + A2 +A11 +A12 +A13 +A14+A15	Safety requirements for automatic electric regulators and controllers

CE EC Declaration of Conformity

Name and address of the individual who is authorised to assemble the technical documentation:

Ralf Gielen
Head of Technology

Location: D - 77972 Mahlberg
Date: 01/03/2015

EHRET GmbH
Andreas Schnaase
Head of Sales

EHRET GmbH
Manuel Meier
Management

Installation FAQs

INFO
Specifications refer to standard orders. Specifications may vary with individual orders!

1. Which parts have been delivered?

- Carrier profiles with premounted guide rails. Version in accordance with the required projection:
  System A75, A105, A148 with continuous carrier profiles
  System A195 with wall basic profile and hooked-in rail carrier
- Trolleys and stoppers are pushed into the guide rails
- Sliding sashes with premounted suspension bars and premounted shutter guide profiles
- Guide bracket, unattached, fits guide Type A (punctiform guide) or with Type B (continuous guide), quantity and version **see Chapter 5.1 “Guide bracket matrix”**
- Guide T-profile, unattached, enclosed with continuous guides
- Cover trim with laterally closing cover, unattached, with fastening screws Version with Systems A75, A105 and A148 as continuous cover profile, single part. As continuous cover with System A195, although 2-part version

2. Which means of attachment are being used?

- The means of attachment are not included in the scope of delivery!
- The selection of the attachment materials is oriented towards the mounting bases on hand, the load-bearing capacities of which are to be checked before the installation. Observe without limitation the regulations of the manufacturers of dowel and attachment materials.

WARNING
Unsuitable means of attachment could lead to severe injuries and/or damage to property. Select the means of attachment in accordance with the load-bearing capacity of the mounting bases.

3. Which sash–wall clearances and sash–wall overhangs are to be observed?

If no object-specific special overhangs are agreed to, the following applies:
- Wall and intermediate clearances with sash assembly depth 32 and 48 mm = 12 mm
- Wall and intermediate clearances with sash assembly depth 70 mm = 15 mm
- Sash overhang in lintel area 30 mm
- Lateral sash overhang 40 mm to the reveal

4. Which parts are to be positioned where on the structure?

- Position and fasten carrier profiles above the lintel as shown in the system drawing and stop diagram **(see Chapter 1.1 “Installing carrier profiles”)**
  - System A75
  - System A105
  - System A148
  - System A195
- Position and fasten side guide brackets as shown in the system drawing and stop diagram **(see Chapter 1.5 “Installing lower sliding shutter guides”)**
  - Side guide bracket Type A
  - Side guide bracket Type B
- Stop diagrams **(see Chapter 4. “Stop diagrams”)**

5. How are the sliding sashes hooked into the trolleys and how can the sashes be readjusted?

- The sliding shutters with the hooking bars are pushed into the hexagon screws (SW13) screwed in the trolleys from below and fastened with lock nuts (SW17) after the height adjustment.
- The prescribed clearance from the upper edge of a sash to the lower edge of the guide rail is 33 mm for all systems.
- The height can be adjusted by a maximum of +/- 5 mm by screwing the hexagon screw (SW13) in or out.

WARNING

Incorrect installation could lead to severe injuries and/or damage to property. Take care to ensure the hexagon screw is securely threaded sufficiently far into the carriage.

WARNING

Incorrect installation could lead to severe injuries and/or damage to property. If the lock nuts are not tightened firmly, the sliding sash can become detached and fall. The solid seating of the lock nuts is to be checked.

- The wall clearance can be readjusted by a maximum of +/- 2 mm by shifting the suspension bars horizontally in the suspension screws.
- As an additional disconnection lock, the lock nut can be protected against inadvertent loosening with the optional safety spring.

6. What is to be taken into account with the function check?

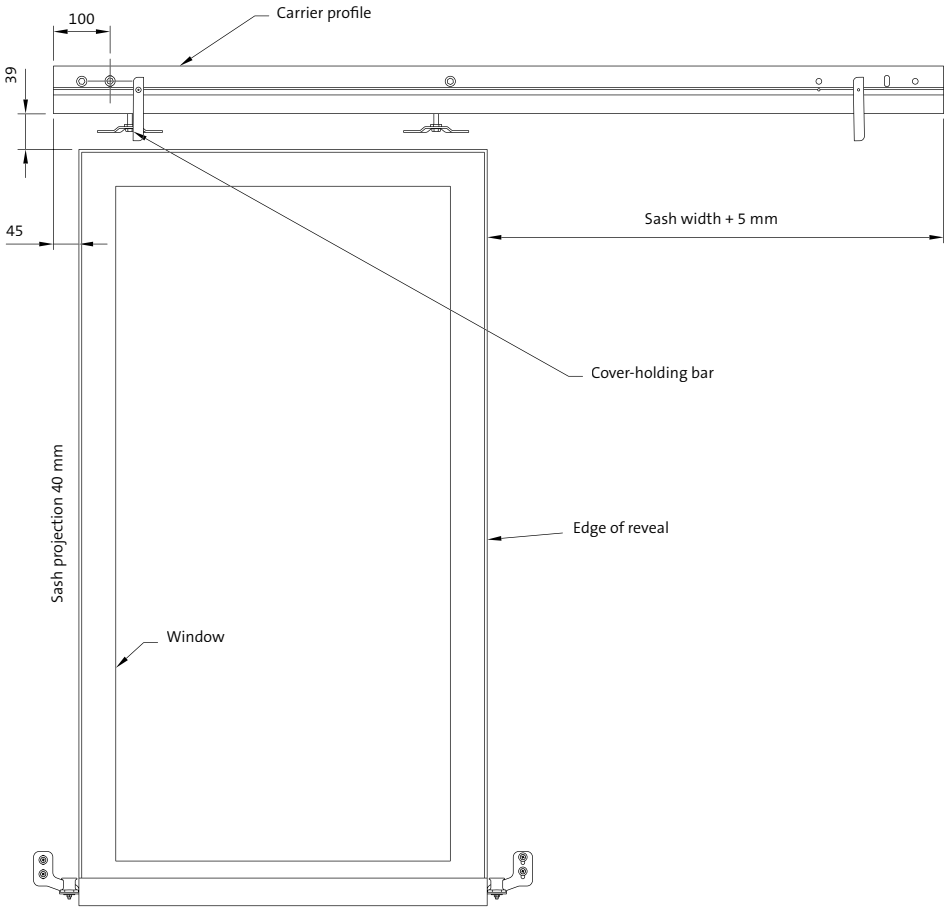
- Can the sliding shutters be moved easily?
- Is the holding force of the trolley stoppers set properly (not too strong or too weak)?
- Are all of the lock nuts on the suspension bars firmly tightened?
- Are the distances to the reveal and clearances of the lateral guides aligned to the sliding shutters?
- Are the sliding shutters aligned parallel to one another?
- Are the sliding shutters aligned to the facade?

1. Installation instructions

1.1 Installing carrier profiles

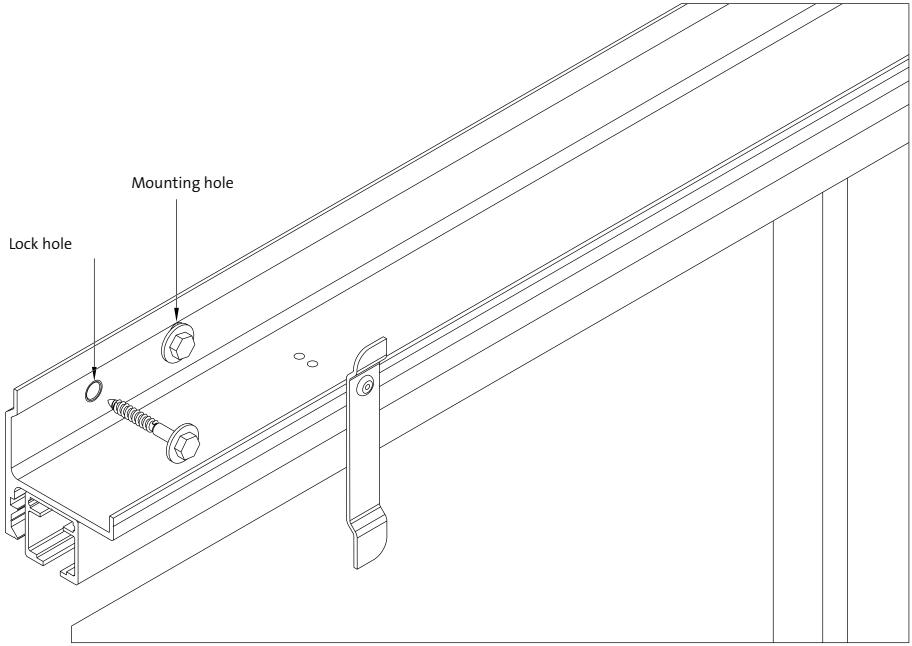
➔ Determine position of the carrier profiles with respect to the window opening in accordance with the system drawing and sash width

➔ Position the carrier profile as shown in the system drawing and mark the oblong holes for fastening



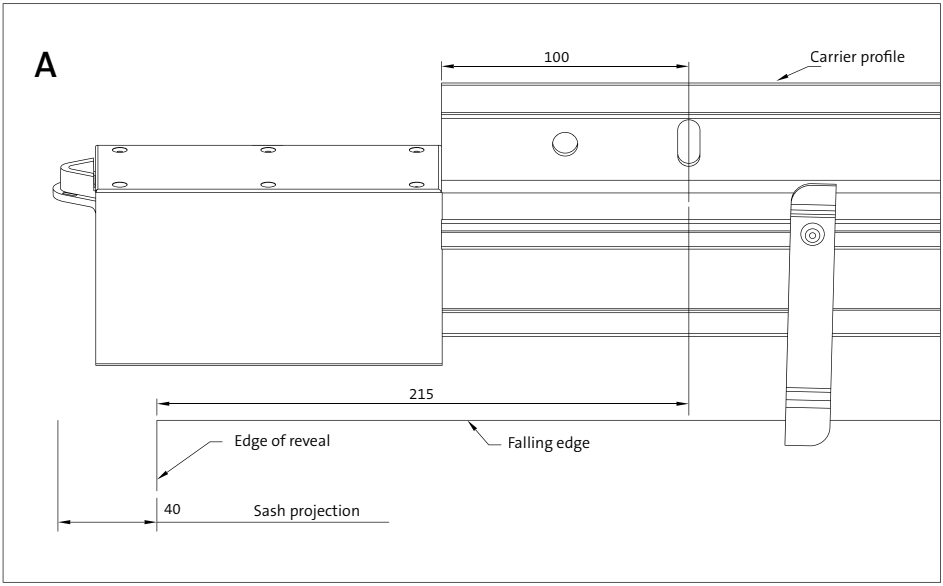
1.1 Installing carrier profiles

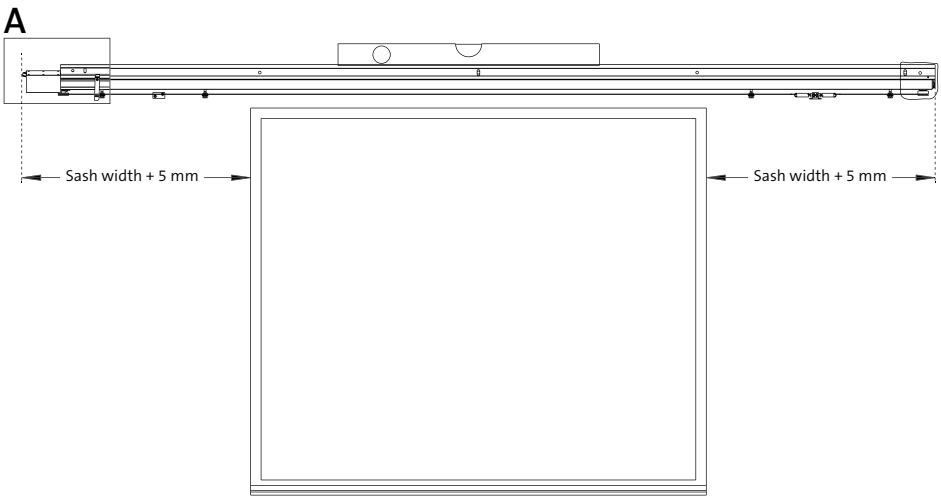
➔ Mark & centre-drill the mounting bore holes (oblong)
➔ Screw or dowel carriers to wall surface (all bore holes including security bore hole)
➔ Align carrier profile
➔ Fasten carrier profile in place with additional screws or dowels in the security bore holes.



1.2 Positioning of the carrier profile to the reveal edge

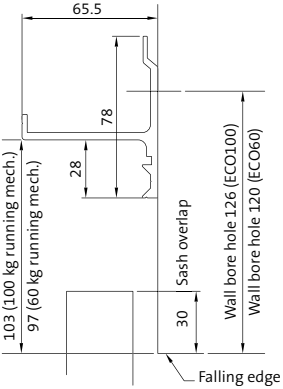
Standard installation with motor positioning in the area of the edge of the reveal

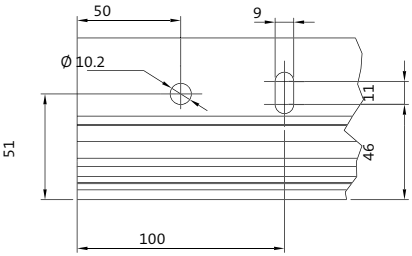




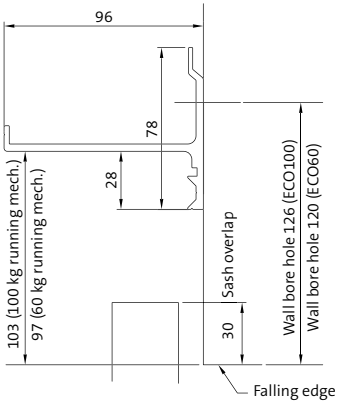
Article overview of carrier profiles

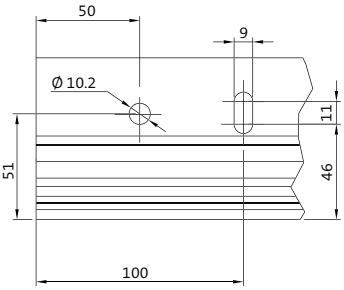
Carrier profile A75



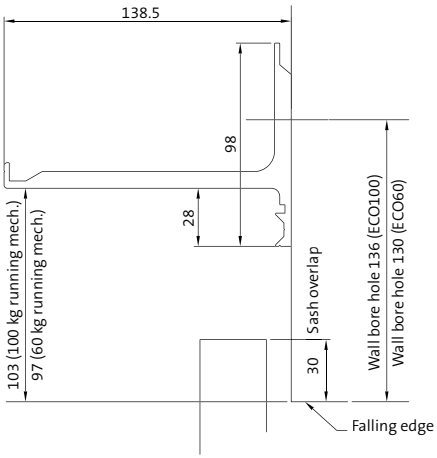


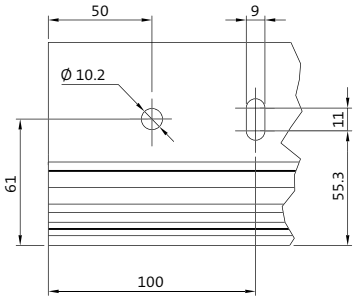
Carrier profile A105



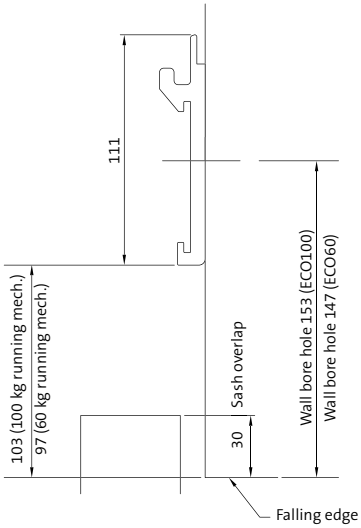


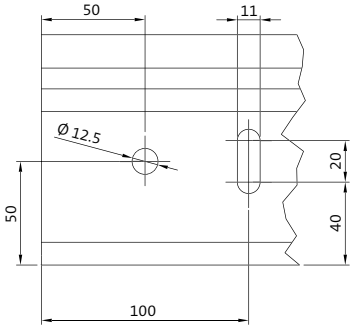
Carrier profile A148





Basic wall profile A195

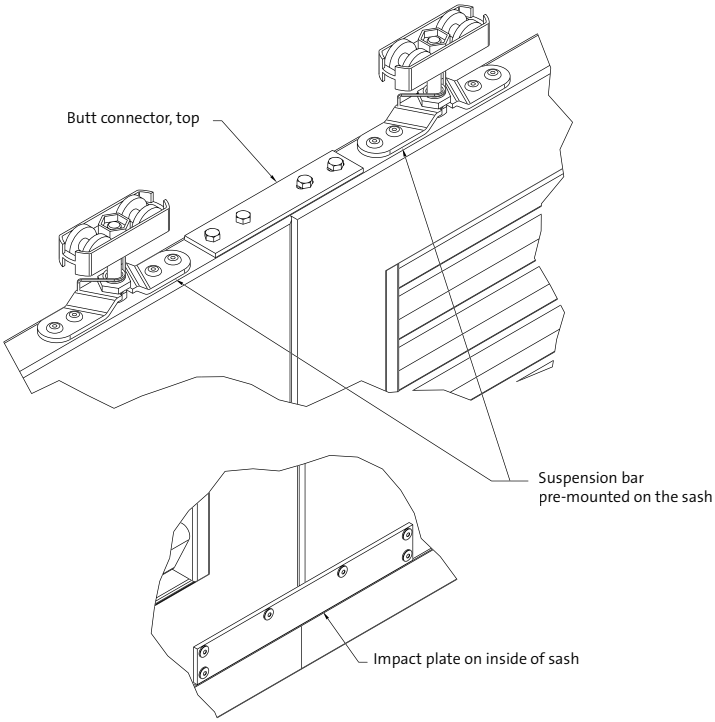




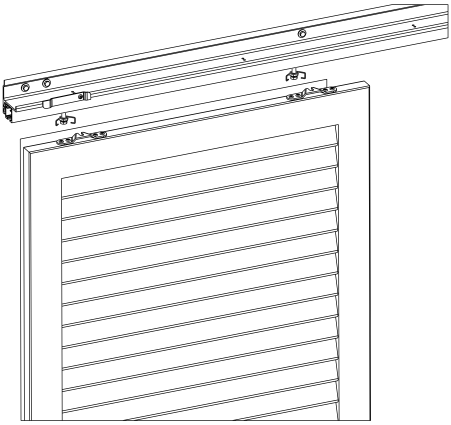
1.3 Coupling sliding shutters
(with multi-section coupled sashes)

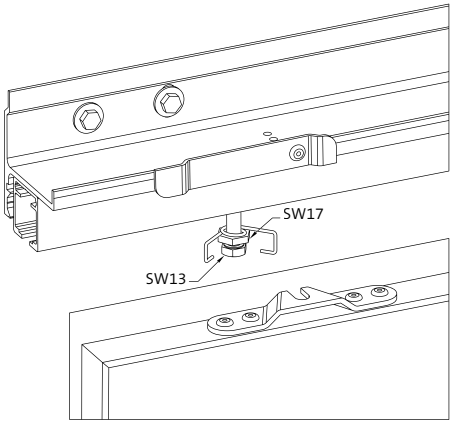
To ensure more secure transport, coupled sashes are delivered as single sashes and must be assembled on site. The mounting holes of the connectors are pre-drilled. The butt connectors and plates with loose fastening materials are included. Assembly sequence for the sash coupling:

- ➔ Unpack the sashes to be coupled and position them in relation to each other
- ➔ Hook the sliding sashes into the sliding system
- ➔ Slide the sashes together and screw the butt connectors in place at the top
- ➔ Position and rivet the impact plate on inside of the sash

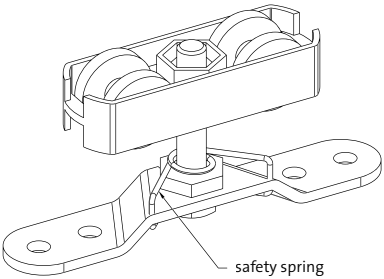


1.4 Hook the sliding sashes into the trolley





➔ Adjust sashes
➔ Hang the safety spring into the suspension bar



Adjustment range for sash calibration:

↕ +/- 5 mm

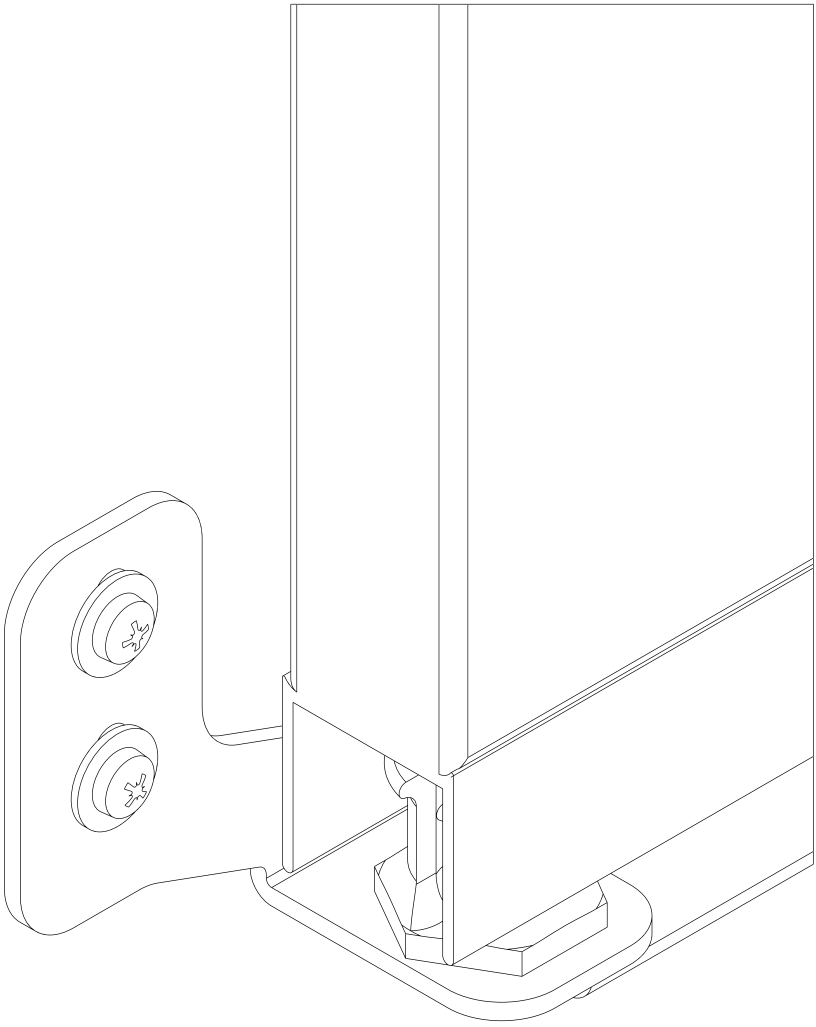
↔ +/- 2 mm

➔ Tighten the nuts firmly (key width SW13 + SW17)

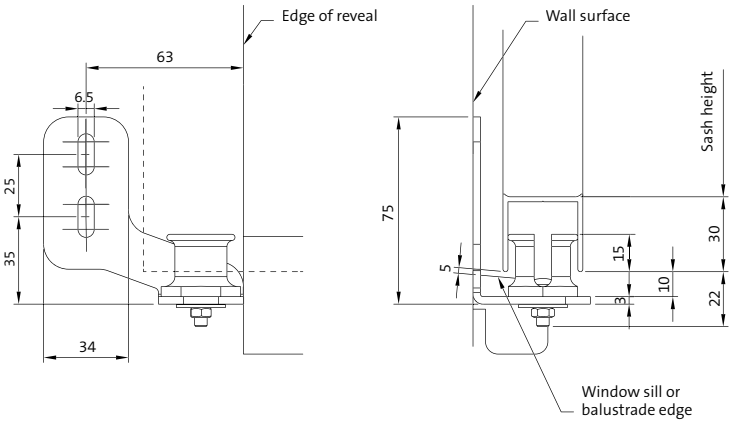
1.5 Installing lower sliding shutter guides

➔ Position and fasten lateral guides as shown in the system drawing.

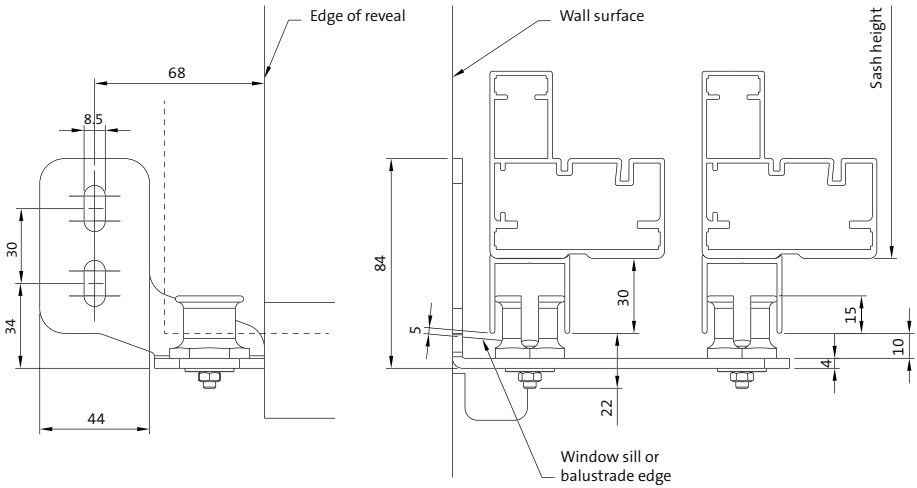
Type A – punctiform guide (ECO), offset



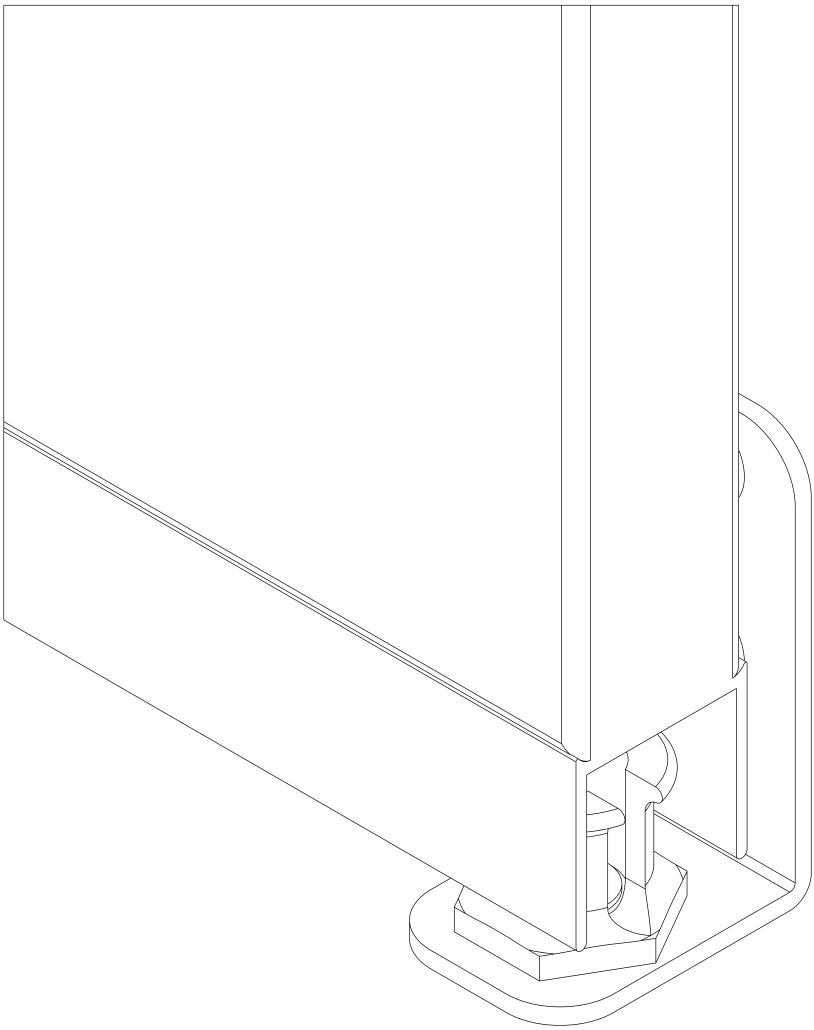
Mounting bore holes for side guide bracket Type A
Punctiform guide, offset, visible width 34 mm



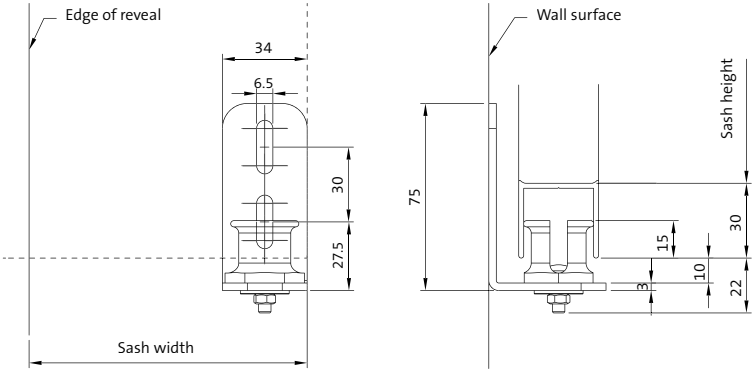
Mounting bore holes for side guide bracket Type A
Punctiform guide, offset, visible width 44 mm



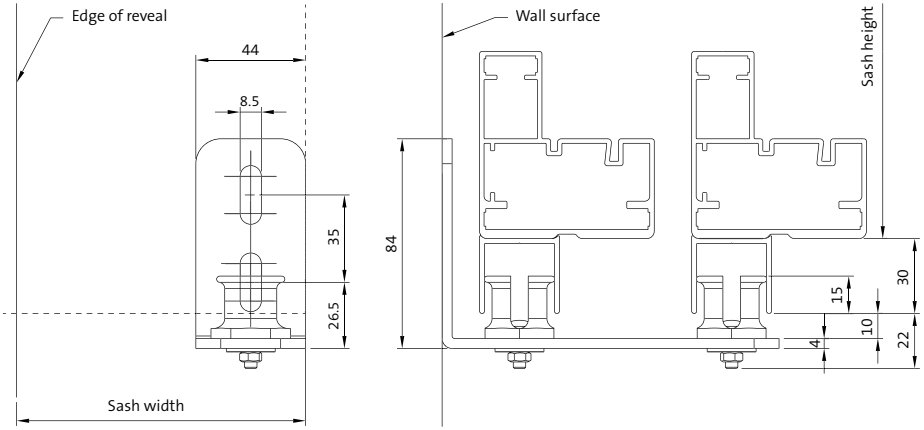
Type A – punctiform guide (ECO), straight version



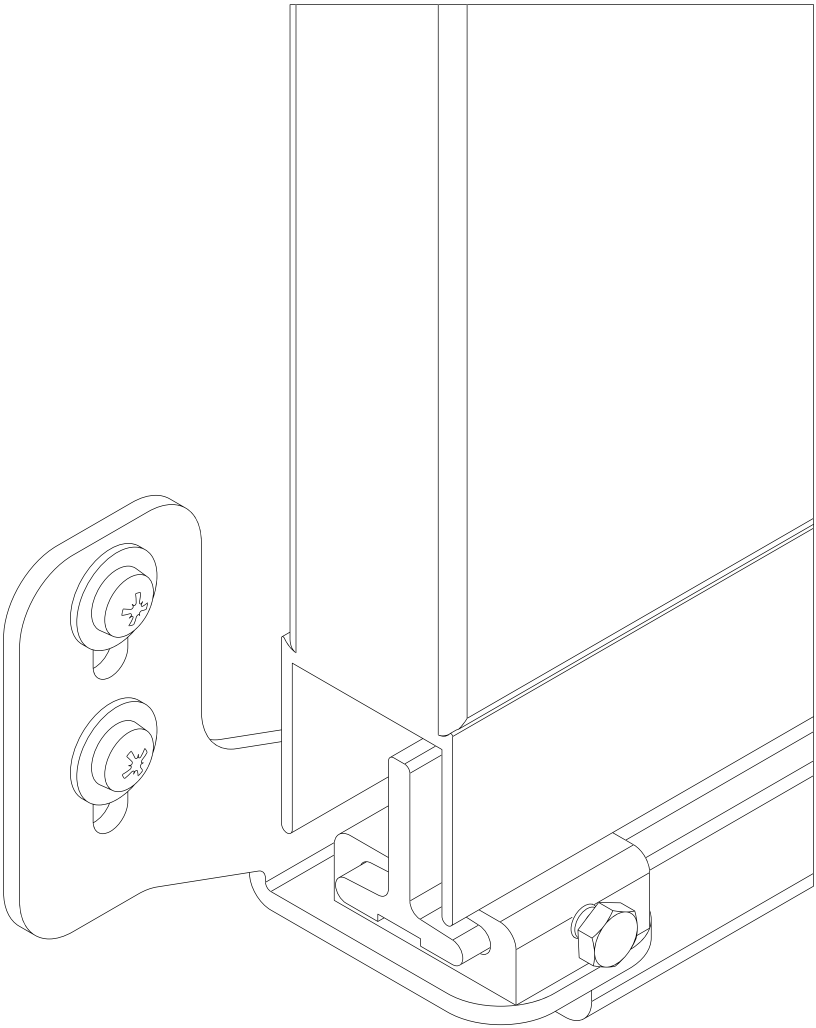
Mounting bore holes for side guide bracket Type A
Punctiform guide, straight version, visible width 34 mm



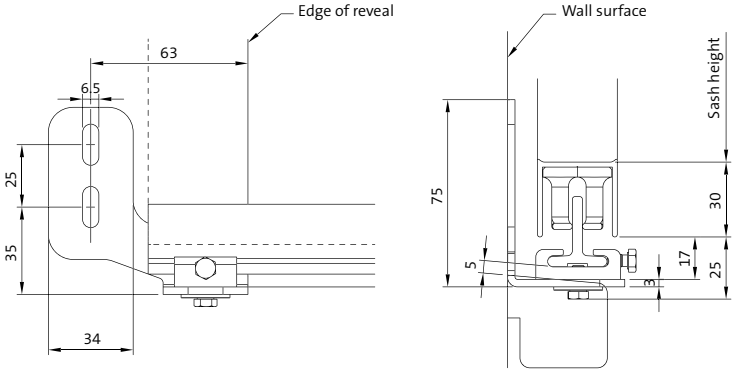
Mounting bore holes for side guide bracket Type A
Punctiform guide, straight version, visible width 44 mm



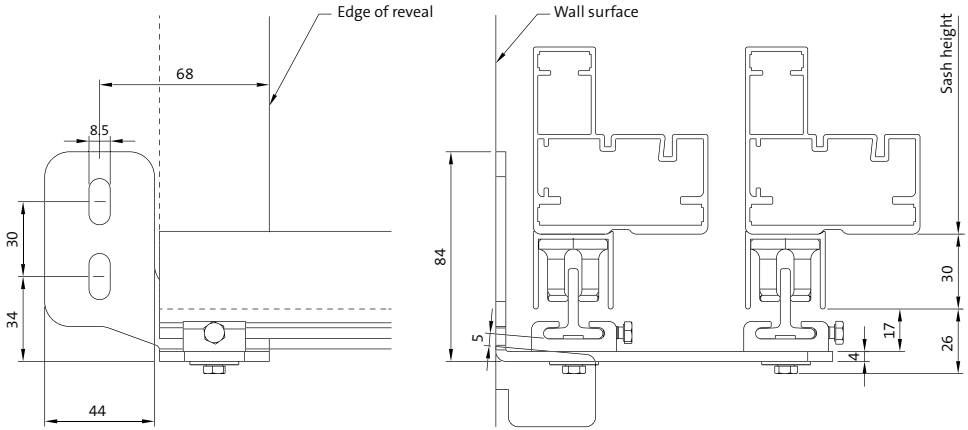
Type B – continuous guide (ECO), offset



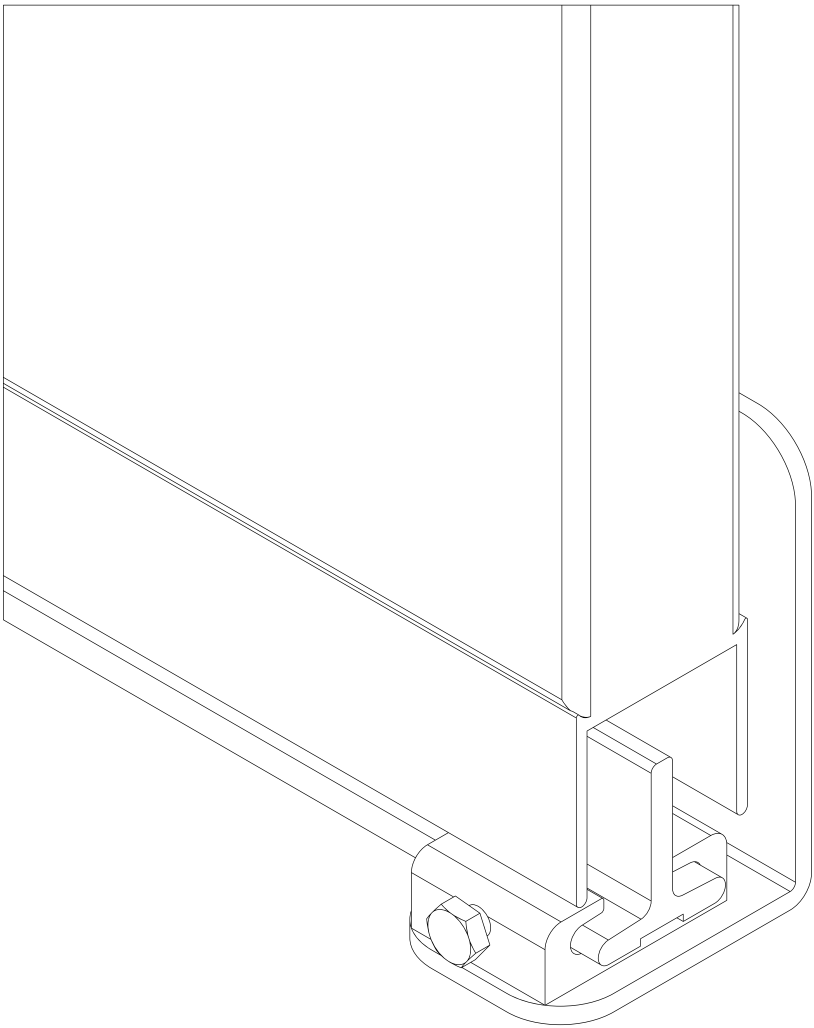
Mounting bore holes, side guide bracket Type B
Continuous guide, offset, visible width 34 mm



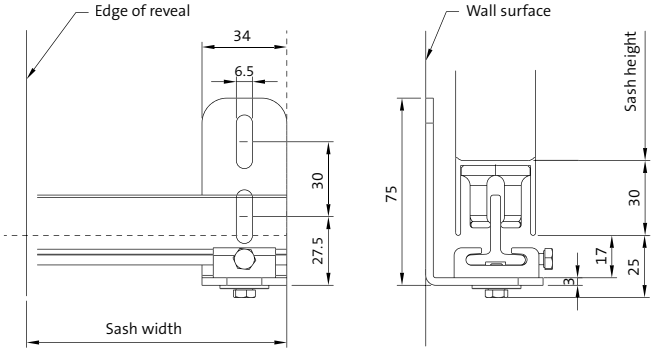
Mounting bore holes, side guide bracket Type B
Continuous guide, offset, visible width 44 mm



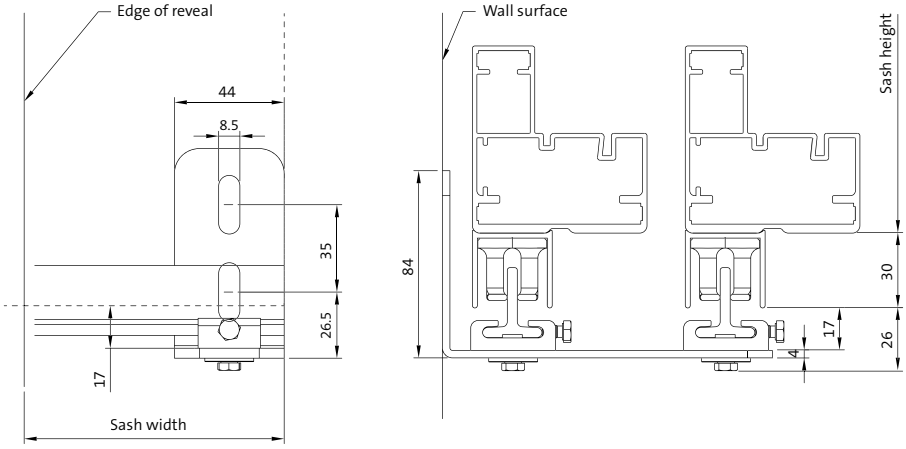
Type B – continuous guide (ECO), straight version



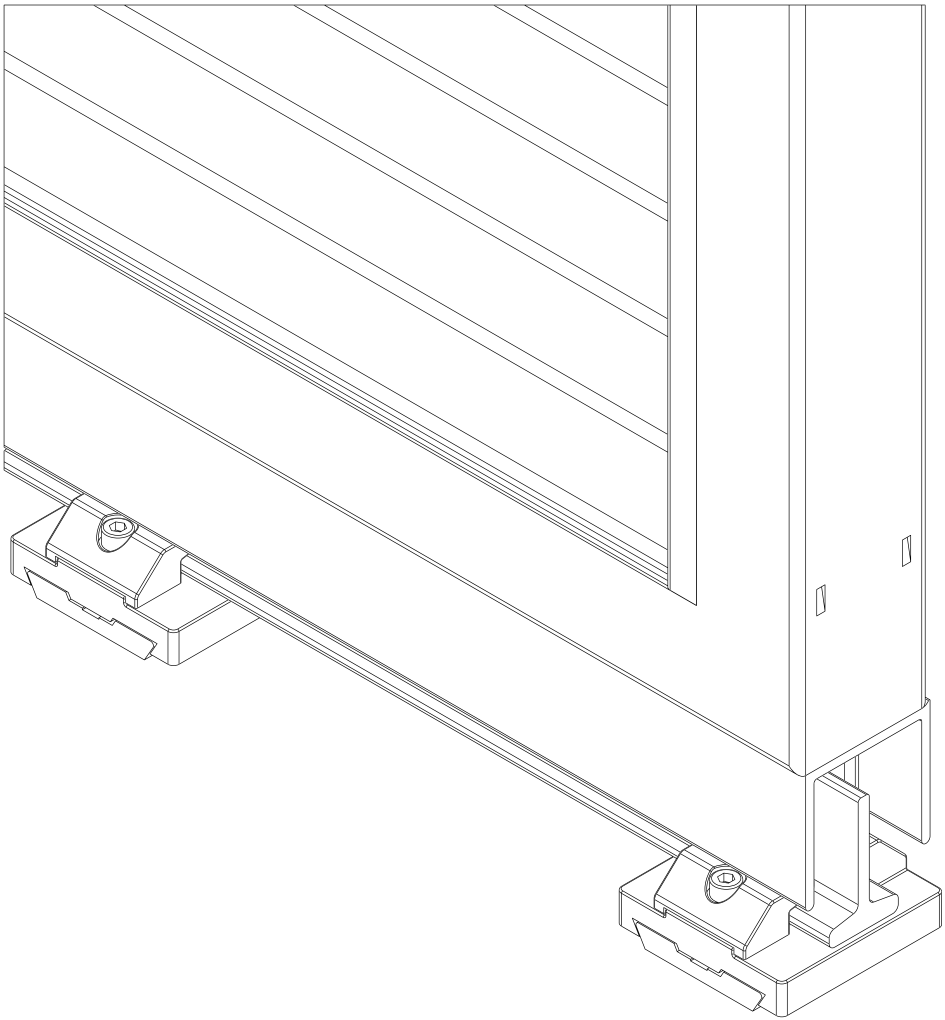
Mounting bore holes, side guide bracket Type B
Continuous guide, straight version, visible width 34 mm



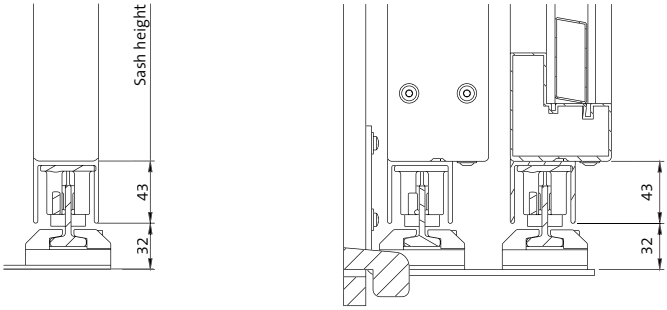
Mounting bore holes, side guide bracket Type B
Continuous guide, straight version, visible width 44 mm



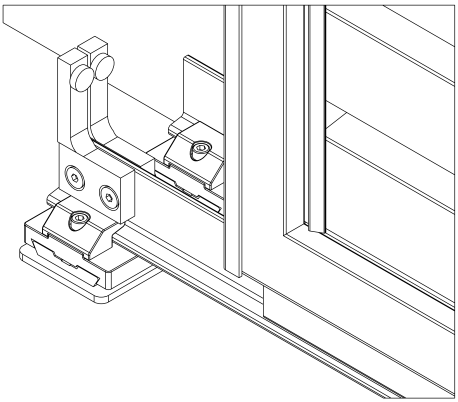
Type C – continuous guide “reinforced”



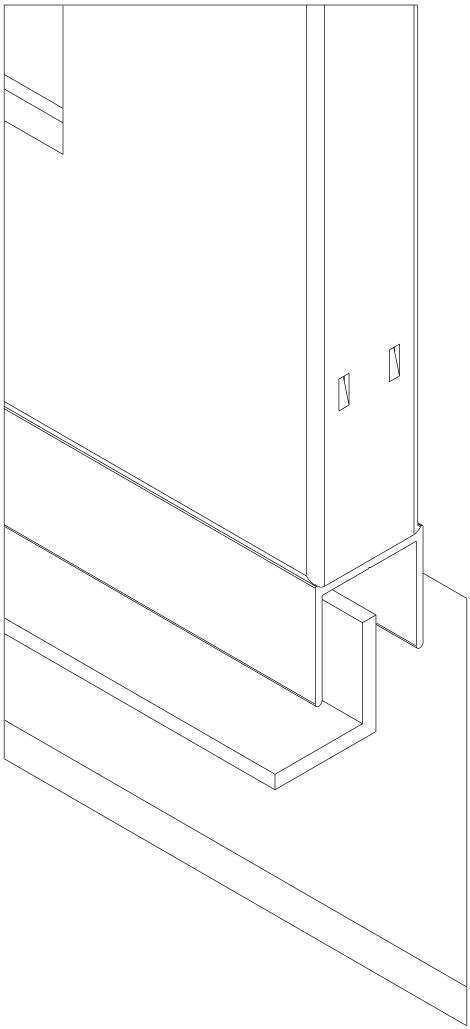
Individual mounting, side guidance bracket Type C „reinforced“,
continuos guide, straight version



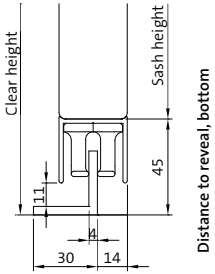
Continuous guides Type C “reinforced”,
with rail stoppers

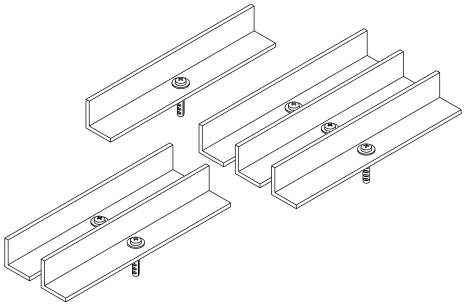


Type D – continuous guide (floor installation)

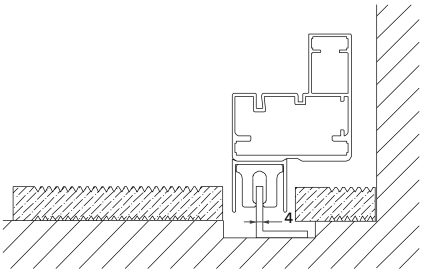


Continous Guide Type D (floor installation)
with guide brackets 30 × 30 × 4 mm, single-/double-/triple-rail



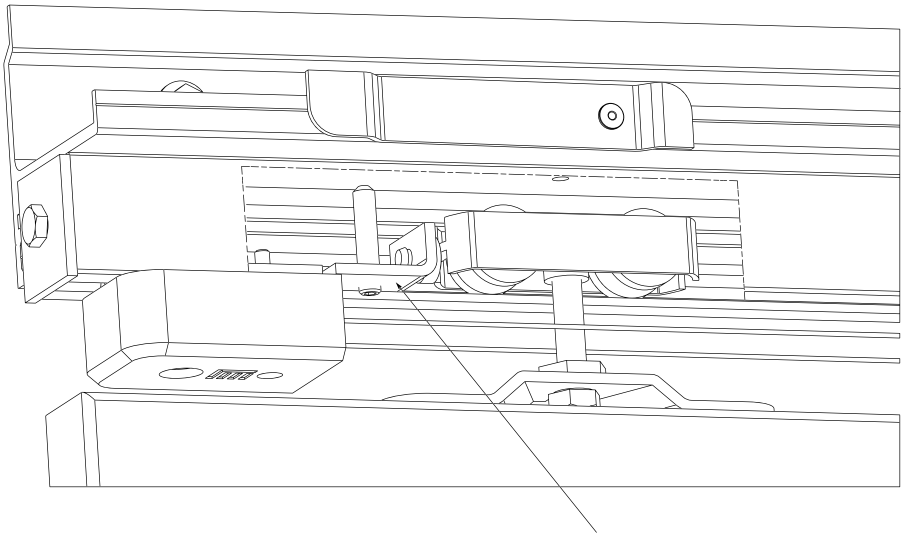


Floor guide Type D for installation on a firm base by building contractor.
There is no adjustment option at mounting Type D.



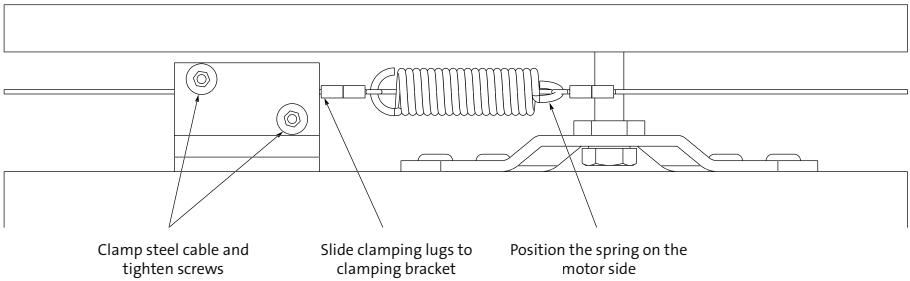
1.6 Setting trolley stoppers with electrical wire drive

➔ Push sliding shutter into end position
➔ Move stopper against trolley
➔ Tighten set screw

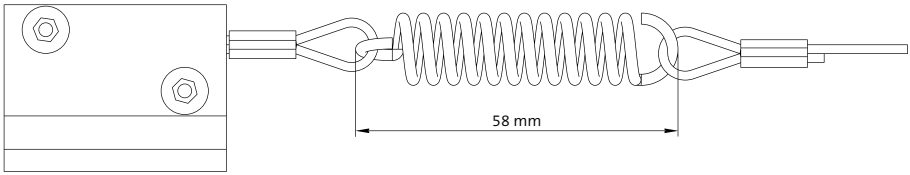


1.7 Coupling sliding shutters to electrical wire drive

➔ Position steel cable with extension spring to actuated sash.
➔ Clamp steel cable in clamps on the sliding shutters



➔ Remeasure cable and spring tension and increase tension if necessary

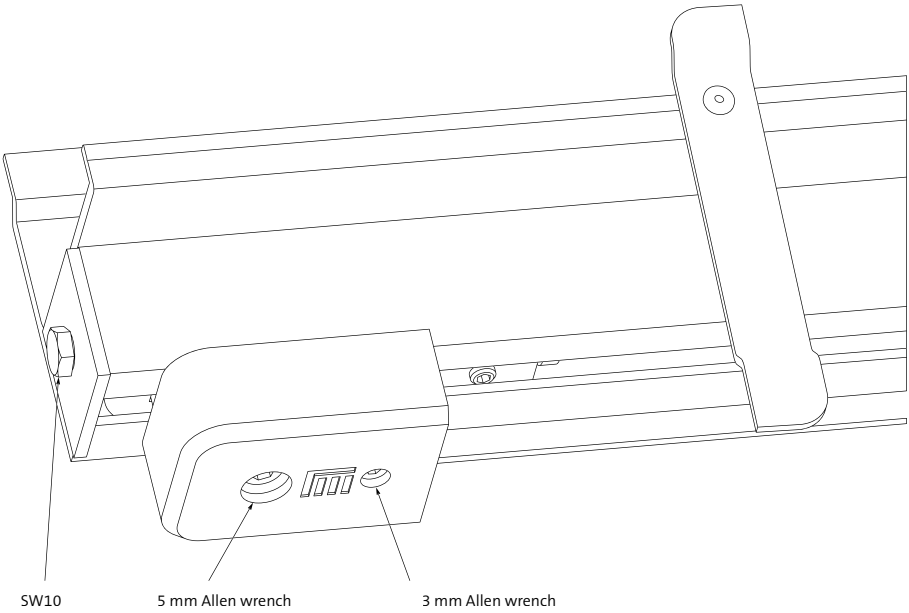


NOTE

- An additional sash is clamped in synchronised fashion to the steel cable in set-ups 1/L-R, 2/L-RR, 2/LL-R and 2/LL-RR. To accomplish this, move the sashes to the Open position and clamp the steel cable firmly in the clamping bead on the sliding sashes.
- If the position of the extension spring is arranged in such a way that it cannot be connected with the sash to be driven, then a commissioning must take place first **(see Chapter 3.2)**.
- Manual shifting of the steel cable is not possible!

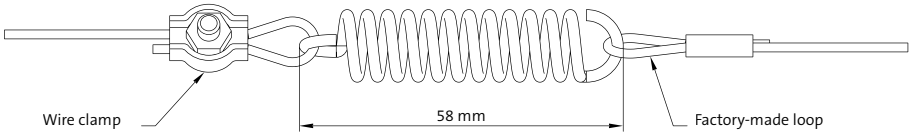
1.8 Tensioning steel cable

➔ Undo set screws at return pulley
➔ Rotate front-side hexagon screw until the extension spring is tensioned at 58 mm
➔ Tighten set screws



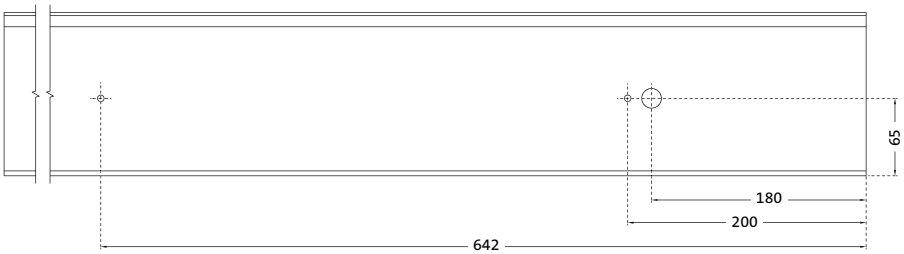
1.9 Electrical sliding systems with extra length (optional)

- ➔ Steel cable is delivered loose with a factory-fitted loop
- ➔ Installation of the rails and carrier rails
- ➔ Tighten steel cable on pulley wheels
- ➔ Hook extension spring into the loop (motor side)
- ➔ Slide the loose wire end into the wire clamp and hook the loop into the extension spring
- ➔ Tighten wire clamp and cut off overlapping wire end
- ➔ Pre-tension the extension spring to 58 mm
- ➔ Clamp steel cable in sash clamp
- ➔ Put system in operation



1.10 Attach solar panel on the cover

- The panel is attached as standard near the drive with an edge clearance of 100 mm to the edge of the cover.
- **Important:** Because of the mounting holes in the cover, no later modification is possible!
- The solar panel cannot be fastened as standard with ceiling installation (see Notes).
- **Important:** When installing the solar panel, take care to ensure that the cables and minifit plugs are not exposed to direct sunlight!

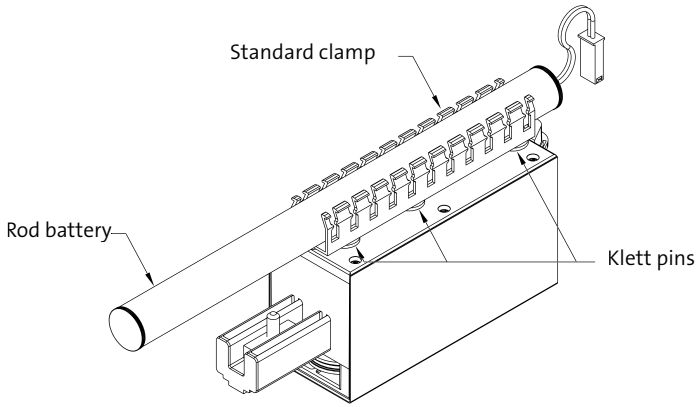


NOTES

- The solar panel is able to generate electricity only when sunlight falls on the visible face of the panel.
- Care must be taken to ensure the line of sight from the solar panel to the sky.
- Take care to ensure that the solar panel is not shaded by trees standing in front of it, overhanging roofs or parked vehicles (lorries).
- Depending on the location, environmental and natural factors, it is advisable to check the solar panel regularly at one's own discretion and to initiate appropriate measures as necessary.
- Protect the solar panel against soiling and environmental factors (use only water and a soft cloth to clean!).
- Protect the solar panel against damage, as it is essentially comprised of only a pane of glass.
- External impacts and mechanical stresses may lead to the formation of cracks (microfissures), which may then lead to partial or total destruction of the panel.

1.11 Attaching the rechargeable battery

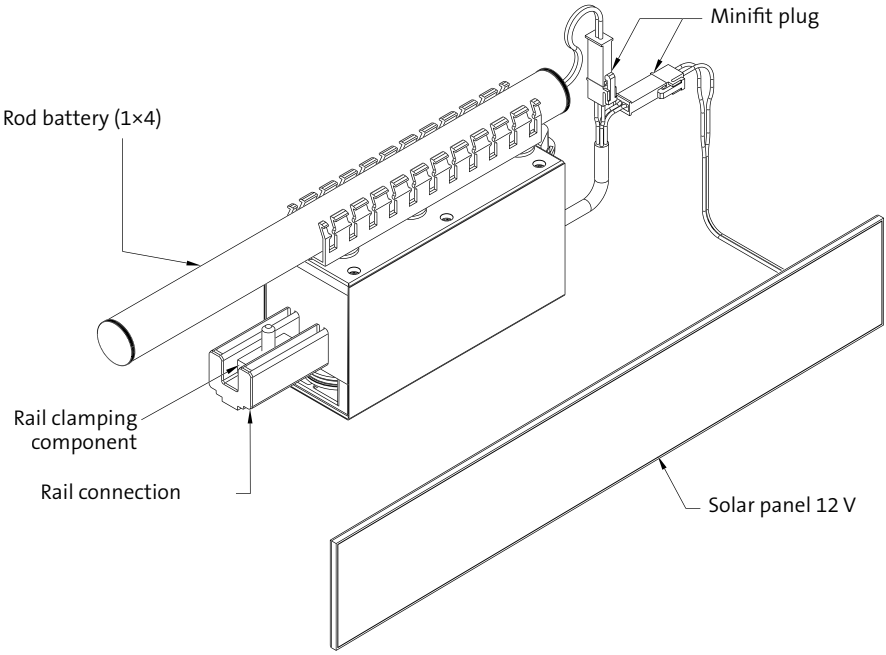
- Rod battery and standard clamp are delivered unmounted
- Standard installation: Clamp the battery in the standard clamp and fasten this to the motor housing with Klett pins
- The battery cannot be fastened as standard with ceiling installation (see Warning).



WARNING

- Do not expose the rechargeable batteries to direct moisture or sunlight.
- Protect the rechargeable batteries against splashing water.
- The rechargeable batteries are a delicate structural component that may not be damaged. Take this fact into account for handling and during installation.
- A short circuit between the +/- output lines will lead to immediate destruction.
- If, despite a warning signal from the drive, a rechargeable battery is operated at low battery voltage, there is a risk of a defect occurring as the result of total discharge.
- Care must be taken to ensure that none of the connection cables are pinched; otherwise there is a risk of short circuit and system failure.

2. Product description



The EHRET VOLETRONIC Solar sliding shutter drive is a drive with integrated control for the actuation of sliding shutters.

Properties

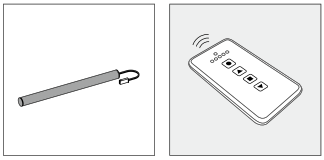
- Configurable running speed
- Programming of the pick-up position of double bars and acceleration or delay of the running speed at the beginning, the end and in the carriage range.
- Creep travel upon reaching the beginning and end positions

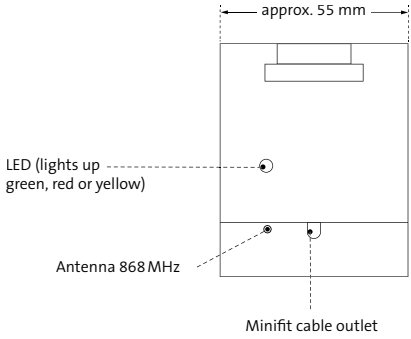
Technical data

Power supply	Solar 12 V
Rechargeable battery	Lead-fleece battery 12 V; 1.3 Ah
Solar panel	60 mm × 570 mm; 4 Watt
IP type of protection	IP40
Temperature range in operation	- 20° C to + 60° C
Range	approx. 100 m (free field)
Radio frequency	868 MHz rolling code

3. Operating instructions

3.1 Connection

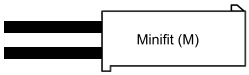




- Monitoring LED on the side of the motor housing (green | yellow | red) used for example for checking the direction of travel
- The motor is equipped with two connection cables with minifit plugs for the connection with a solar panel (12 V) and a rechargeable battery (1×4 in a Plexiglas tube).

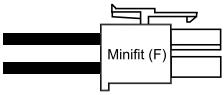
Battery/solar panel connection

Minifit (M) plug



Connection for connecting the solar panel

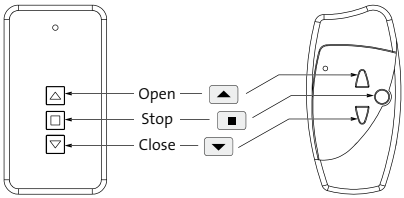
Minifit (F) plug



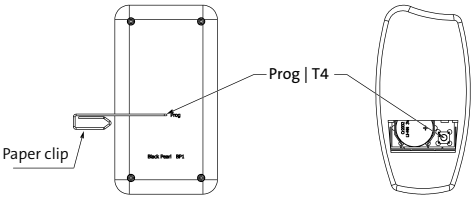
Connection for connecting the battery

Hand-held transmitter (front and rear view)

Black Pearl (1-channel) **HSN** (1-channel)



Black Pearl (1-channel) **HSN** (1-channel)



3.2 Commissioning

NOTE

- The correct installation of the slide shutter drive may be carried out only by authorised specialist personnel; only then can complete functionality be guaranteed.
- All cables and plug connections must be installed in such a way that they are protected against direct sunlight

Initial commissioning can be carried out once the motor has been correctly installed in the sliding shutter system. To accomplish this, the following 3 points must be carried out:

A Master transmitter teaching **(see Chapter 3.2.1)**
Teaching a master transmitter is a prerequisite for the commissioning of the VOLETRONIC Solar. Only with the master transmitter can all of the settings can be made.

Except for the n-channel wireless hand-held transmitter, all wireless hand-held transmitters can be used as a master transmitter. With multi-channel wireless hand-held transmitters, any channel can be used as a master transmitter for a drive.

Important: Each drive must be taught on a separate wireless channel! The first transmitter to be taught becomes the master transmitter.

B Solar panel/rechargeable battery monitoring
Place the cover on the carrier profile and connect the solar panel with the motor. Press the Open button ▲ and the Close button ▼ precisely simultaneously. The LED on the drive will then display two illumination signals, one after the other:

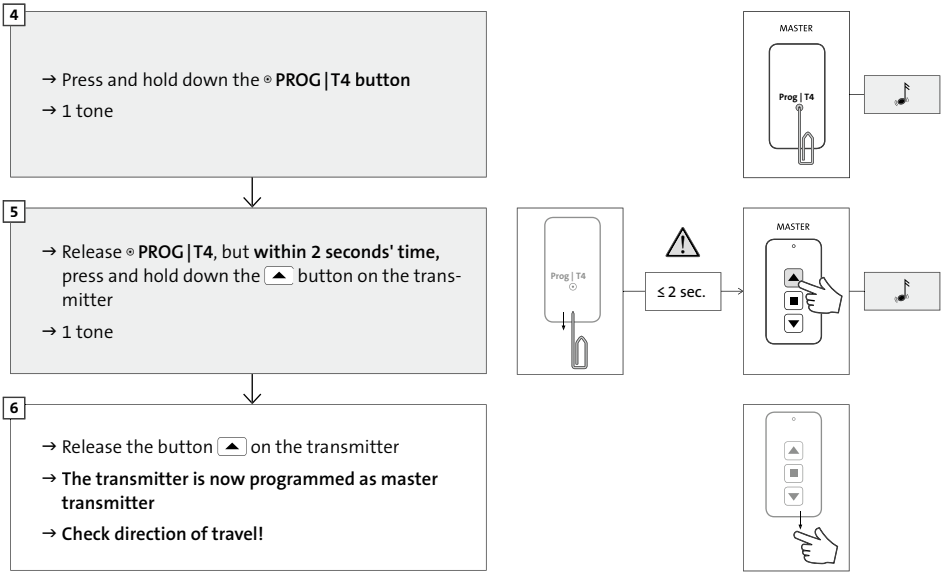
The 1st signal reports the solar conditions:
yellow → Battery being charged, sufficient sun, panel connected
red → No sun, battery not being charged, panel is not connected correctly

The 2nd signal reports the battery status:
green → Battery fully charged
yellow → Battery almost discharged
red → Battery discharged, no further travel possible

C Monitoring/modification of the direction of travel **(see Chapter 3.2.2)**

3.2.1 Teaching master transmitter

1. In order to put the control in ready mode, the solar panel must be disconnected from the drive and the battery from the motor.
2. Wait approx. 10 seconds.
3. Connect the battery with the motor.
4. Hold the transmitter to be taught approx. 1 m away from the front of the drive. Press the **PROG | T4** button with the paper clip and hold it down. While doing so, move with the transmitter toward the drive until a signal tone sounds and ceases.
5. Now release the **PROG | T4** button and, within 2 seconds' time, press the **Open button** ▲ on the transmitter and hold it down until a signal tone confirms the correctness of the programming.
6. The new transmitter is now programmed as **master transmitter**.



NOTES ON THE MASTER TRANSMITTER

- The teaching of the master transmitter in the motor must take place at a short distance. All further settings can be undertaken from a greater distance.
- Parameter modifications can be carried out only with the master transmitter. The parameter modifications are transferred to the additionally taught transmitter as required.
- Any new, non-programmed or cleared transmitter can be used as a master transmitter. The transmitter taught as a master transmitter emits a signal tone when the **PROG | T4** button is actuated.

3.2.2 Monitoring/modification of the direction of travel

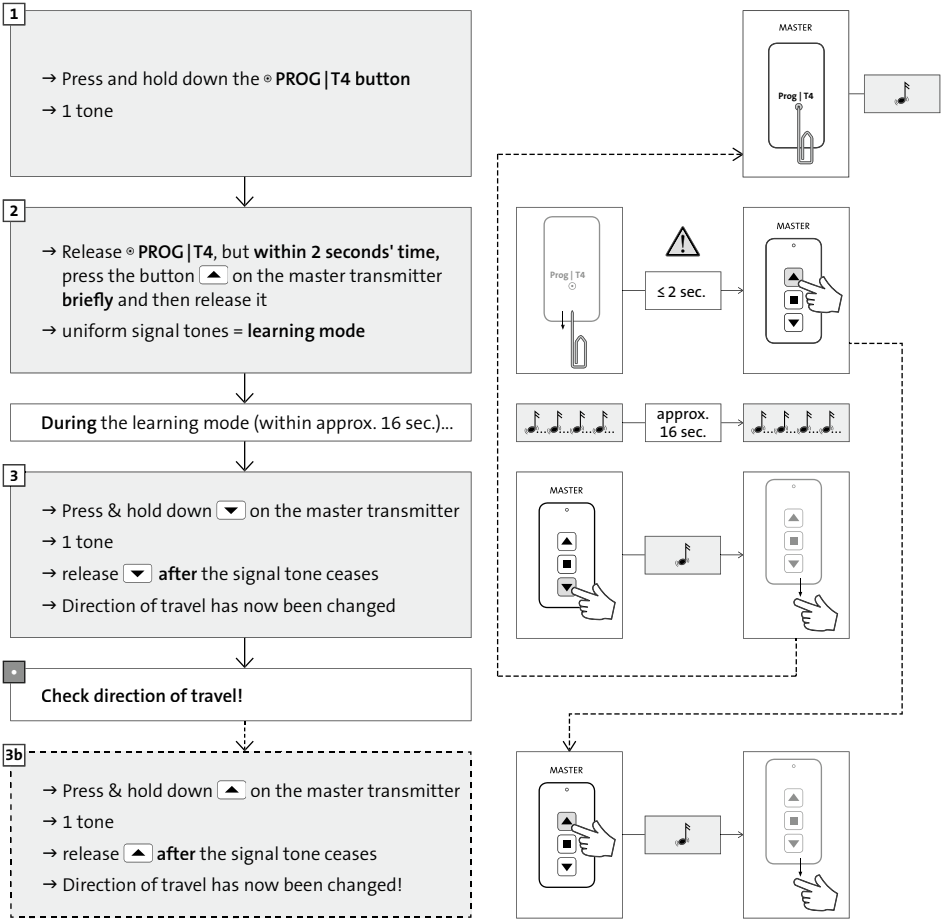
1 If the direction of travel is correctly set, the LED on the drive will light up **green** during **upward travel** ▲ and **red** during **downward travel** ▼. If this is not the case: Press and hold the **PROG | T4** button down until the subsequent signal tone ceases.

2 Now release the **PROG | T4** button and, within 2 seconds' time, press the **Open button** ▲ on the master transmitter briefly. The uniform signal tones that sound for around 16 sec. confirm **learning mode**.

3 While the system is in learning mode, press and hold **Close button** ▼ until the subsequent signal tone ceases.

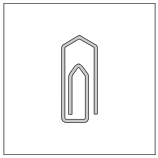
• **Check the direction of travel!** If the direction of travel is still not set correctly, repeat steps 1 + 2 and then carry out step 3b while the system is in learning mode.

3b While the system is in learning mode, press and hold **Open button** ▲ until the subsequent signal tone ceases.



3.3 Programming wireless remote control

VOLETRONIC Solar 12 V with wireless remote control



Programming wireless remote control

NOTES

- In order to avoid an unwanted change of parameters, the time (max. 2 sec.) between the individual programming steps must be be observed without fail.
- It is imperative that the signal tone(s) have ceased before the next programming step.
- The specifications must be read and adhered to without fail for commissioning or for changing the parameters.
- If the input should be carried out incorrectly, it can be repeated at once.
- Always check the direction of travel after a change of parameters! It is displayed accordingly by the LEDs on the drive housing with **green** for upward travel▲, **red** for downward travel.▼ and **yellow** during the learning run.

Behavior at power breakdown

IMPORTANT!

After power breakdown please consider the following practice :

- Move the sliding shutter with push- button **OPEN** or **CLOSE** in direction of motor to untill the end position. In this position the control system recognize the reference of the normal working.
- If the sliding shutter has been in position of reference, at power breakdown, it is necessary to have to move the shutter for and backward with push- button **OPEN** or **CLOSE**. After that the function is again guaranteed.

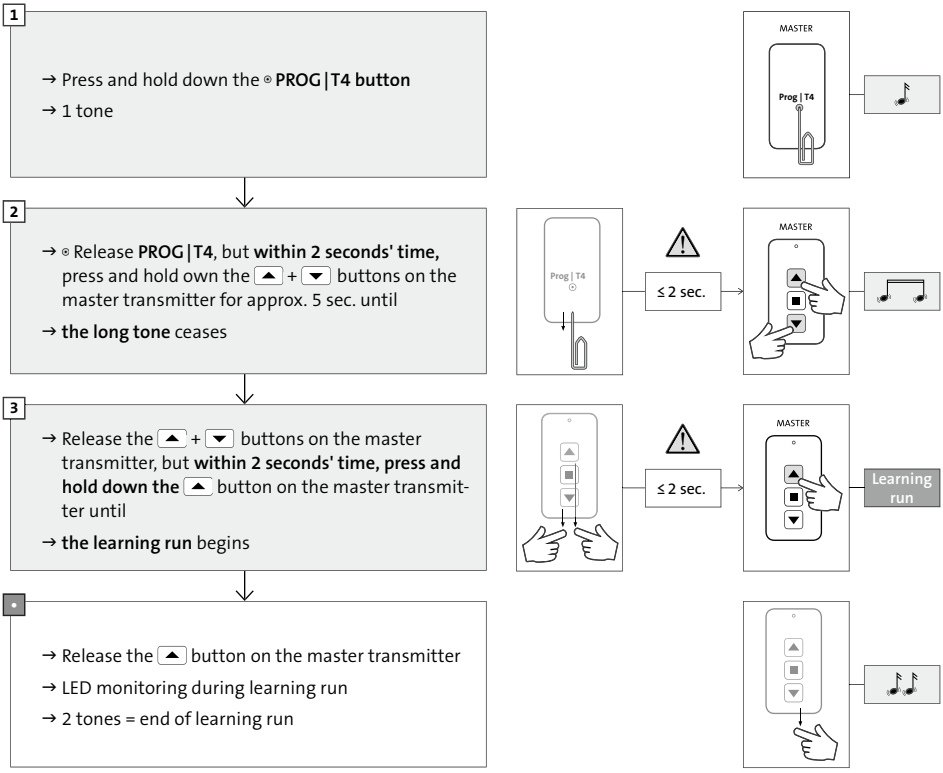
3.3.1 Performing a learning run

SYSTEMS WITH DOUBLE BARS

- In the case of systems with **double bars** (sashes that are not connected with the drive cable), the sashes must first be moved into the **Open end position**. The double bars must be **manually taught during the learning run**. This means: As soon as the powered sash moves the double bar, the **Open button** ▲ and the **Close button** ▼ must be actuated briefly and **simultaneously**. A signal tone confirms the programming.
- This procedure must be repeated in systems with several double bars. Each manual actuation of an additional double bar is acknowledged with an additional signal tone.

1. Press and hold the **PROG | T4** button down until the subsequent signal tone ceases.
2. Now release the **PROG | T4** button and, within 2 seconds' time, press the **Open button** ▲ and the **Close button** ▼ on the master transmitter and hold them down until the subsequent signal tone ceases (approx. 5 sec.).
3. Within 2 sec., press and hold the **Open button** ▲ down until the learning run is triggered automatically.

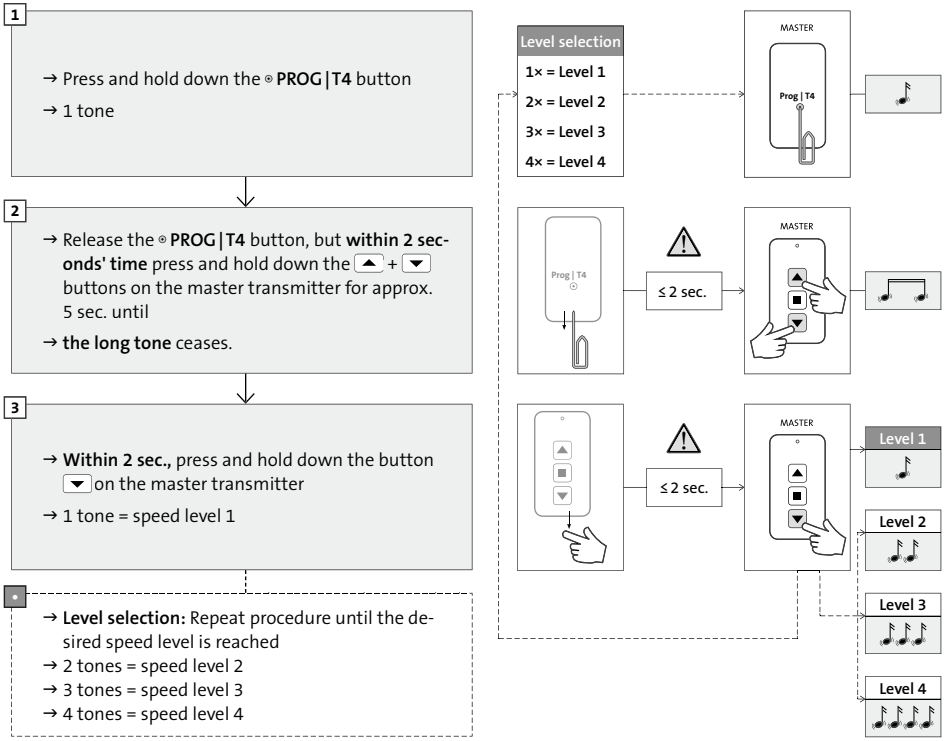
• **LED monitoring:** If the learning run is correct, the **LED** on the drive lights up **yellow** and goes out with a double signal tone.



3.3.2 Setting speed using master transmitter

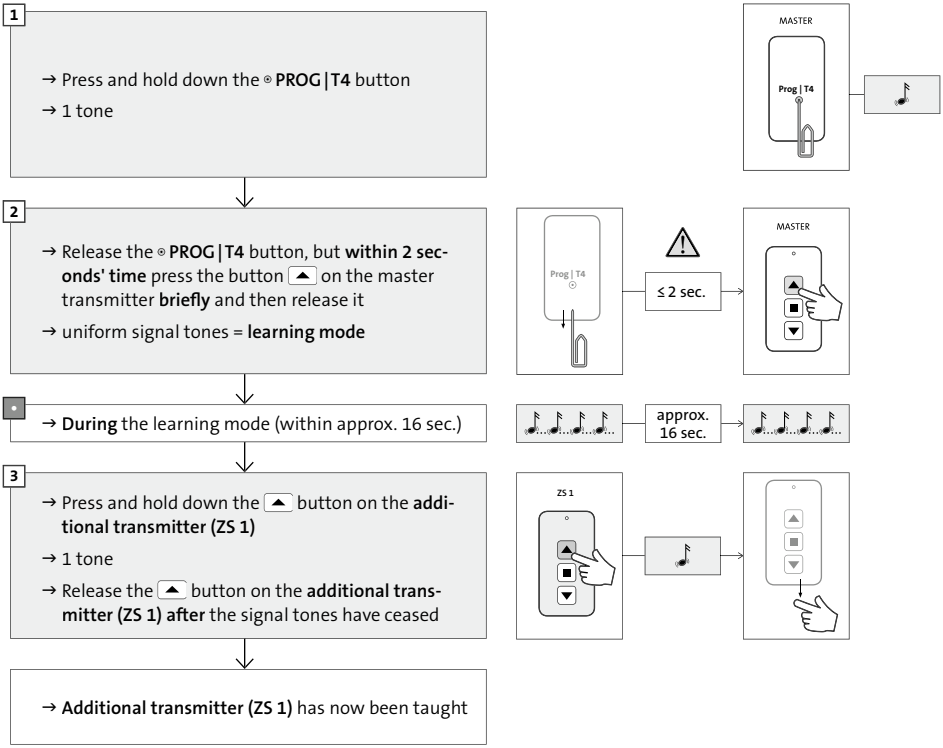
1. Press and hold the **PROG | T4** button down until the subsequent signal tone ceases.
2. Now release the **PROG | T4** button and, within 2 seconds' time, press the **Open button** ▲ and the **Close button** ▼ on the master transmitter and hold them down until the continuous signal tone ceases.
3. Immediately, within 2 sec., press and hold down the **Close button** ▼ until a signal tone acknowledges the speed level (1 tone = 1st level up to 4 tones = 4th level).

- The procedure must be repeated accordingly up to the desired speed level.



3.3.3 Teaching an additional transmitter

1. Press and hold the **PROG | T4** button down until the subsequent signal tone ceases.
2. Release the **PROG | T4** button and, within approx. 2 sec., briefly actuate the **Open button** ▲ on the master transmitter.
- The uniform signal tones that sound for approx. 16 sec. confirm **learning mode**.
3. While this is happening, press the **Open button** ▲ **on the additional transmitter** until the signal tones have ceased.



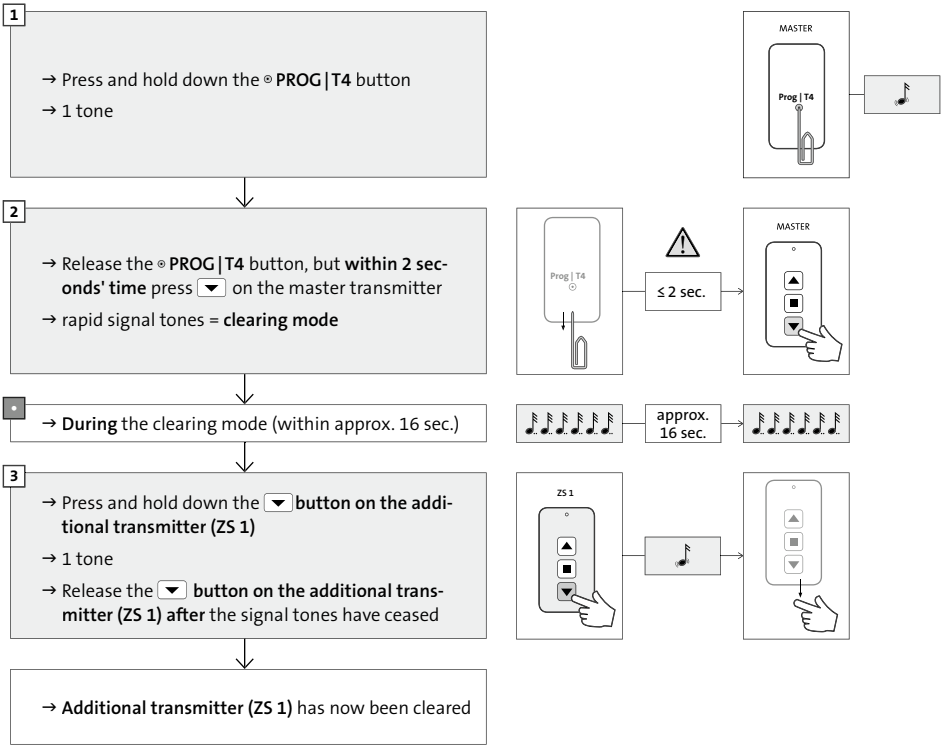
3.3.4 Clearing of an additionally taught transmitter

1 Press and hold the **PROG | T4** button down until the subsequent signal tone ceases.

2 Release the **PROG | T4** button and, within approx. 2 sec., briefly actuate the **Close button** ▼ on the master transmitter.

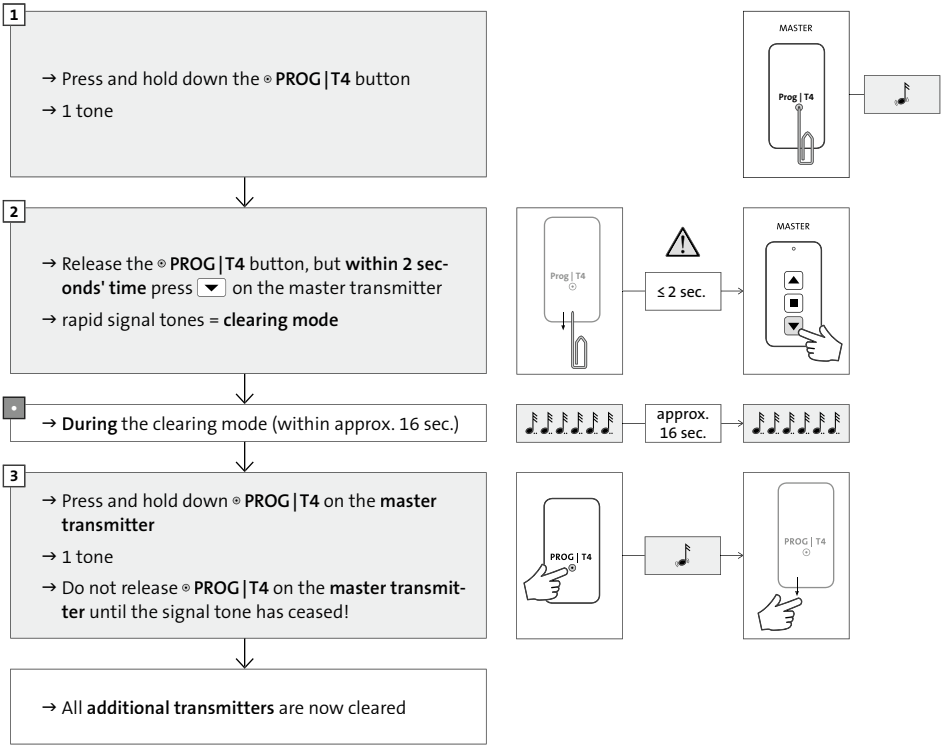
• The rapid signal tones that sound for approx. 16 sec. confirm **clearing mode**.

3 During the clearing mode, press the **Close button** ▼ on the additional transmitter until the signal tones have ceased.

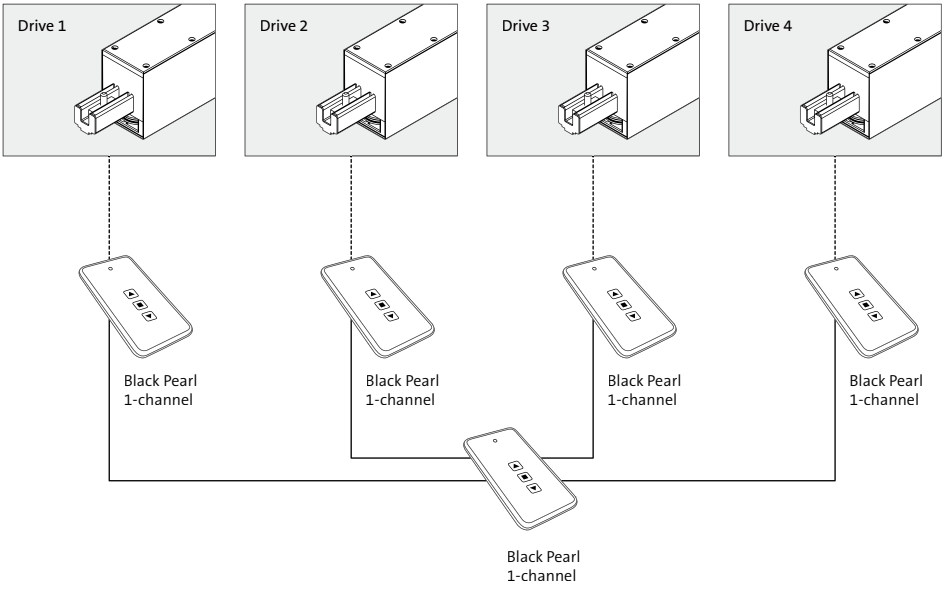


3.3.5 Global clearing of all additionally taught transmitters

1. Press and hold the **PROG | T4** button down until the subsequent signal tone ceases.
2. Release the **PROG | T4** button and, within approx. 2 sec., briefly actuate the **Close button** ▼ on the master transmitter.
- The rapid signal tones that sound for approx. 16 sec. confirm **clearing mode**.
3. During this time, press and hold down the **PROG | T4** button on the master sender until the subsequent signal tone has ceased.



3.4.1 Group control – Application example 1

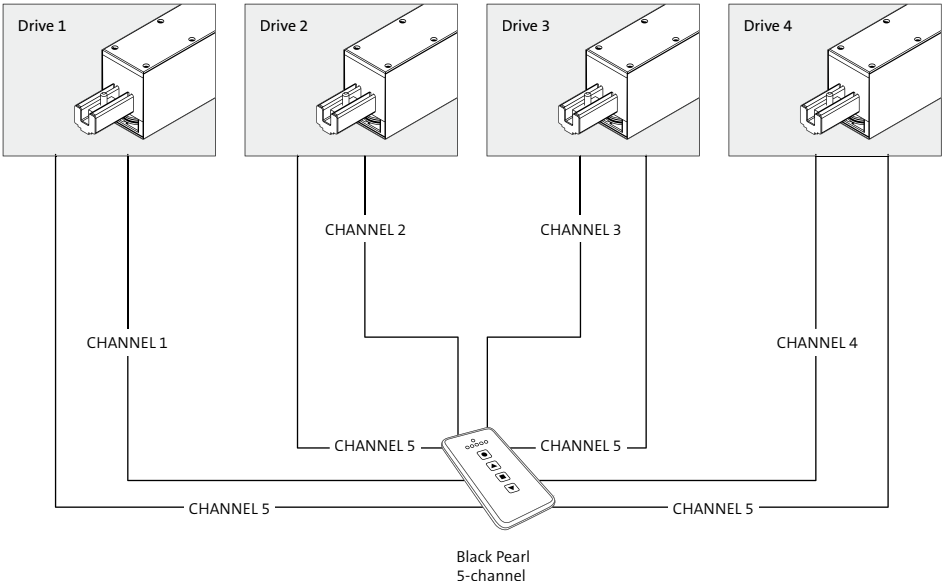


➔ Every drive with wireless actuation is assigned its own 1-channel wireless hand-held transmitter as master transmitter. Important: All settings can be made only with the master transmitter!

➔ In addition, another 1-channel wireless hand-held transmitter is taught as an additional transmitter for each drive (see Programming instructions **Teaching an additional transmitter; Chapter 3.3.3**)

➔ All of the drives can thus be actuated simultaneously with the additional wireless hand-held transmitter.

3.4.2 Group control – Application example 2



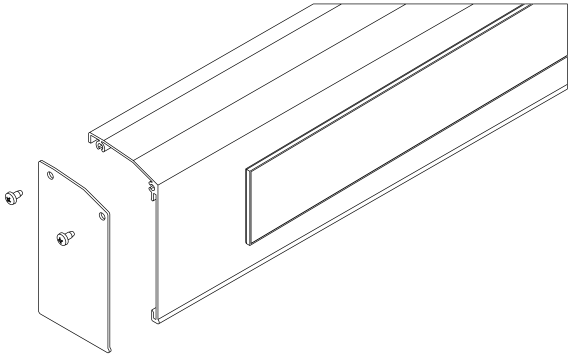
➔ Every drive with wireless actuation has a wireless channel reserved for its use on the multi-channel wireless hand-held transmitter. This channel assumes the master function of the drive. The individual channels are displayed through illumination of different LEDs on the multi-channel hand-held transmitter.

➔ In this example, Channel 1 has been selected for Drive 1, Channel 2 for Drive 2, Channel 3 for Drive 3 and Channel 4 for Drive 4. After all of the drives have been taught, Channel 5 can now be taught as “additional transmitter" for all of the drives.

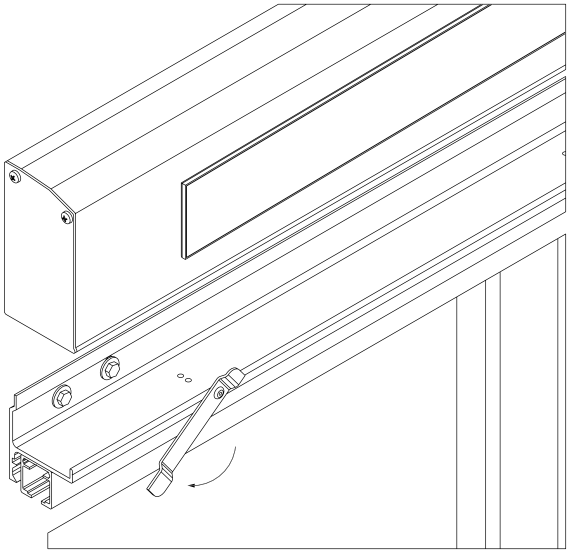
➔ To accomplish this, proceed as follows: Select Channel 1 on the multi-channel hand-held transmitter and activate the **Teaching an additional transmitter function (see Chapter 3.3.3)** .
While the yellow LED on the drive is flashing, select Channel 5 and teach the transmitter by actuating the **Open button** ▲. Channel 1 and Channel 5 are thus taught for Drive 1. Afterwards, teach Drives 2, 3 and 4 the same way. Thus all drives can be actuated simultaneously through Channel 5.

1.12 Installing covers

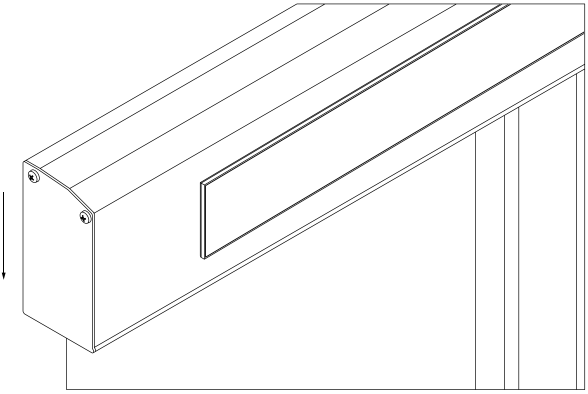
- Screw lateral cover to the cover profile



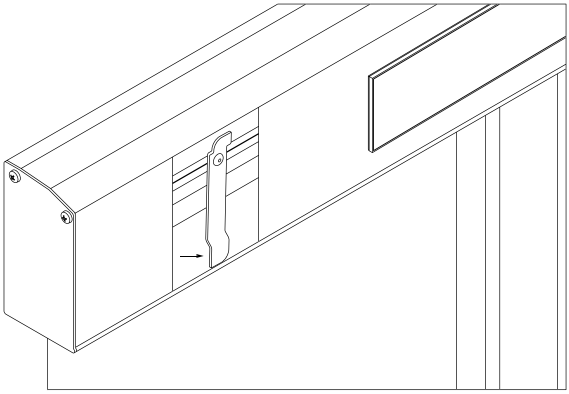
- Set the cover bar at an angle (ca. 45°)



- Hook the cover into place



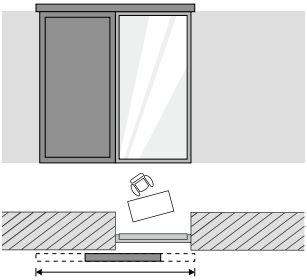
- Screw in the bars and lock them



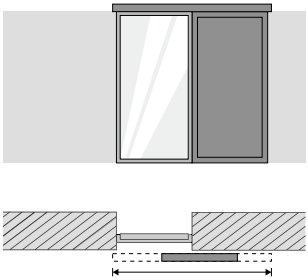
4. Stop diagrams

The stop diagrams are sketched as if viewed from inside.
The term 2/LL-R stands for 2 rails, 2 sashes left (LL) and 1 sash right (R).

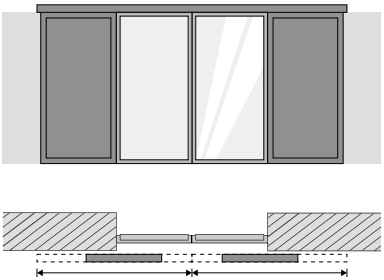
1/R



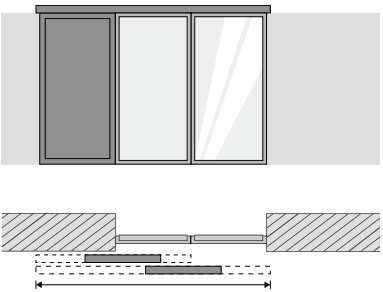
1/L



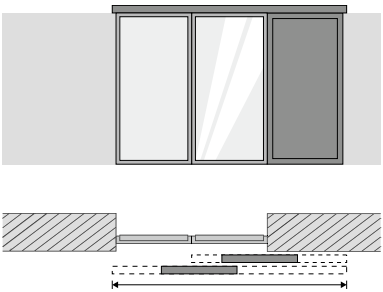
1/L-R



2/RR

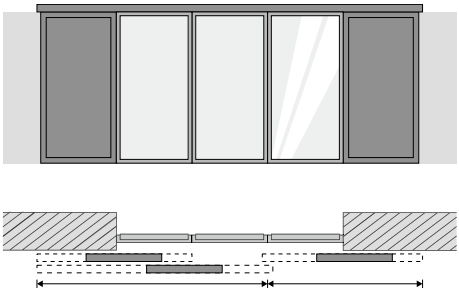


2/LL

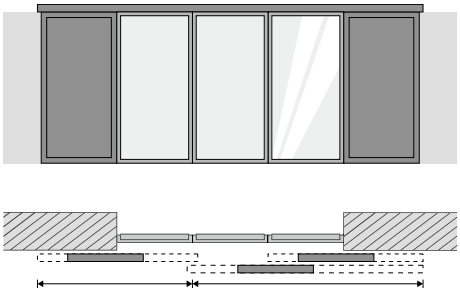


4. Stop diagrams

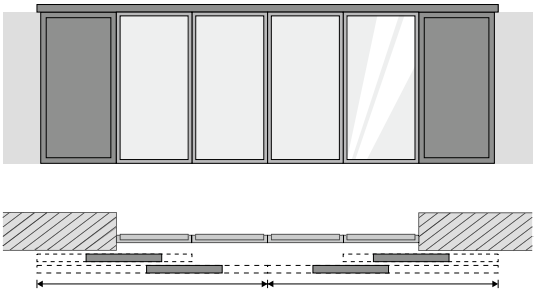
2/L-RR



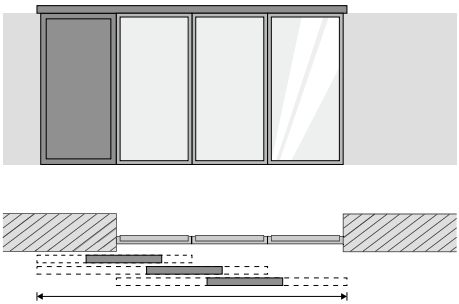
2/LL-R



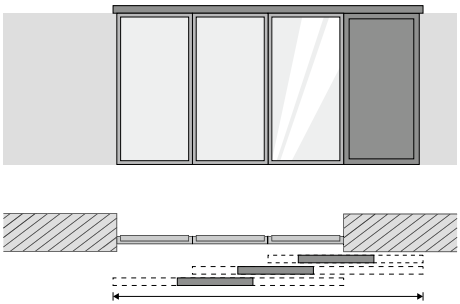
2/LL-RR



3/RRR

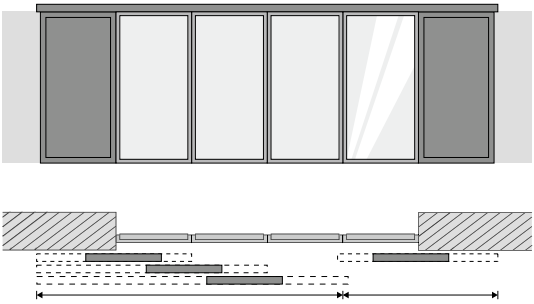


3/LLL

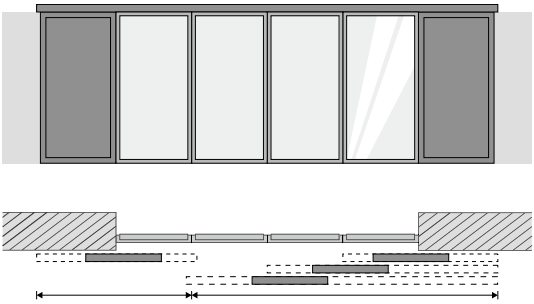


4. Stop diagrams

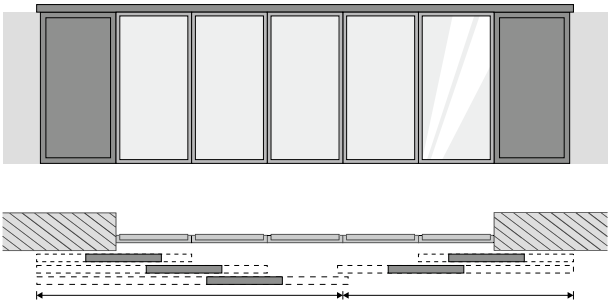
3/L-RRR



3/LLL-R

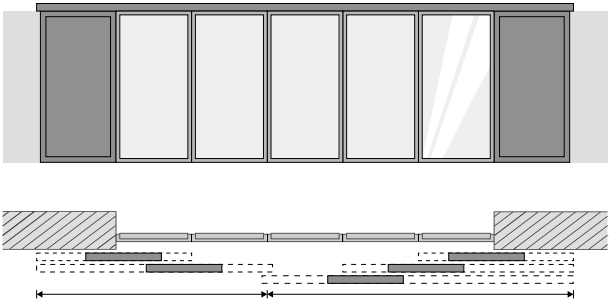


3/LL-RRR

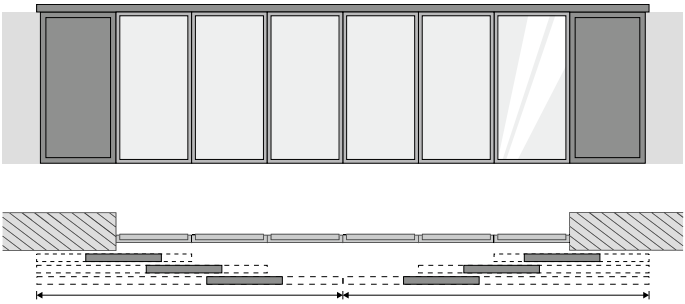


4. Stop diagrams

3/LLL-RR



3/LLL-RRR



5.1 Guide bracket matrix

Lower guide bracket Type A to 32 mm sash assembly depths

Art. no.	1/R	1/L	1/L-R	2/RR	2/LL	2/L-RR	2/LL-R	2/LL-RR	3/RRR	3/LLL	3/L-RRR	3/LLL-R	3/LL-RRR	3/LLL-RR	3/LLL-RRR
813221	1	1	1		1	1	1	1		1	1	1	1	1	1
813121	1	1	1	1		1	1	1	1		1	1	1	1	1
813021	1	1	2			1	1				1	1			
813222				1											
813122					1										
813022				1	1	1	1	2					1	1	
813223									1						
813123										1					
813023									1	1	1	1	1	1	2

Lower guide bracket Type A to 48 mm sash assembly depths

Art. no.	1/R	1/L	1/L-R	2/RR	2/LL	2/L-RR	2/LL-R	2/LL-RR	3/RRR	3/LLL	3/L-RRR	3/LLL-R	3/LL-RRR	3/LLL-RR	3/LLL-RRR
813231	1	1	1		1	1	1	1		1	1	1	1	1	1
813131	1	1	1	1		1	1	1	1		1	1	1	1	1
813031	1	1	2			1	1				1	1			
813232				1											
813132					1										
813032				1	1	1	1	2					1	1	
813233									1						
813133										1					
813033									1	1	1	1	1	1	2

5.1 Guide bracket matrix

Lower guide bracket Type A to 70 mm sash assembly depths

Art. no.	1/R	1/L	1/L-R	2/RR	2/LL	2/L-RR	2/LL-R	2/LL-RR
813241	1	1	1		1	1	1	1
813141	1	1	1	1		1	1	1
813041	1	1	2			1	1	
813242				1				
813142					1			
813042				1	1	1	1	2

5.1 Guide bracket matrix

Lower guide bracket Type B to 32 mm sash assembly depths

Art. no.	1/R	1/L	1/L-R	2/RR	2/LL	2/L-RR	2/LL-R	2/LL-RR	3/RRR	3/LLL	3/L-RRR	3/LLL-R	3/LL-RRR	3/LLL-RR	3/LLL-RRR
814201	1	1	1												
814101	1	1	1												
814001	1	1	2												
814202				1	1	1	1	1							
814102				1	1	1	1	1							
814002				1	1	2	2	2							
814203									1	1	1	1	1	1	1
814103									1	1	1	1	1	1	1
814003									1	1	2	2	2	2	2

Lower guide bracket Type B to 48 mm sash assembly depths

Art. no.	1/R	1/L	1/L-R	2/RR	2/LL	2/L-RR	2/LL-R	2/LL-RR	3/RRR	3/LLL	3/L-RRR	3/LLL-R	3/LL-RRR	3/LLL-RR	3/LLL-RRR
814211	1	1	1												
814111	1	1	1												
814011	1	1	2												
814212				1	1	1	1	1							
814112				1	1	1	1	1							
814012				1	1	2	2	2							
814213									1	1	1	1	1	1	1
814113									1	1	1	1	1	1	1
814013									1	1	2	2	2	2	2

5.1 Guide bracket matrix

Lower guide bracket Type B to 70 mm sash assembly depths

Art. no.	1/R	1/L	1/L-R	2/RR	2/LL	2/L-RR	2/LL-R	2/LL-RR
814221	1	1	1					
814121	1	1	1					
814021	1	1	2					
814222				1	1	1	1	1
814122				1	1	1	1	1
814022				1	1	2	2	2

5.1 Guide bracket matrix

Accessory parts:
Double shutter guides, carriage, cover guard bracket for 32 mm sash assembly depths

Art. no.	1/R	1/L	1/L-R	2/RR	2/LL	2/L-RR	2/LL-R	2/LL-RR	3/RRR	3/LLL	3/L-RRR	3/LLL-R	3/LL-RRR	3/LLL-RR	3/LLL-RRR
813010				1	1	1	1	2	2	2	2	2	3	3	4
813013				1		1		1	2		2		2	1	2
813011					1		1	1		2		2	1	2	2
816011				1	1	1	1	2					1	1	
816012									1	1	1	1	1	1	2
800070				1	1						1	1			
800073									1	1					

Accessory parts:
Double shutter guides, carriage, cover guard bracket for 48 mm sash assembly depths

Art. no.	1/R	1/L	1/L-R	2/RR	2/LL	2/L-RR	2/LL-R	2/LL-RR	3/RRR	3/LLL	3/L-RRR	3/LLL-R	3/LL-RRR	3/LLL-RR	3/LLL-RRR
813010				1	1	1	1	2	2	2	2	2	3	3	4
813013				1		1		1	2		2		2	1	2
813011					1		1	1		2		2	1	2	2
816011				1	1	1	1	2					1	1	
816021									1	1	1	1	1	1	2
800071				1	1						1	1			
800074									1	1					

5.1 Guide bracket matrix

Accessory parts:
Double shutter guides, carriage, cover guard bracket for 70 mm sash assembly depths

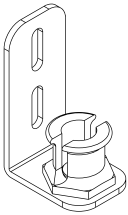
Art. no.	1/R	1/L	1/L-R	2/RR	2/LL	2/L-RR	2/LL-R	2/LL-RR
813012				1	1	1	1	2
816022				1	1	1	1	2
800072				1	1			

Additional guide parts for Type B guides

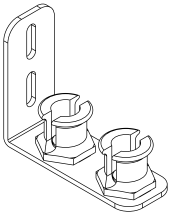
Art. no.	1/R	1/L	1/L-R	2/RR	2/LL	2/L-RR	2/LL-R	2/LL-RR	3/RRR	3/LLL	3/L-RRR	3/LLL-R	3/LL-RRR	3/LLL-RR	3/LLL-RRR
008054	2	2	4	4	4	6	6	8	6	6	8	8	10	10	12

5.2 Article overview of guide brackets

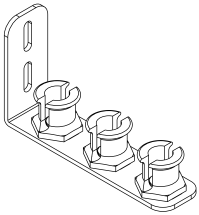
Punctiform profile guides, straight, Type A



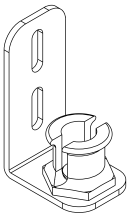
813021



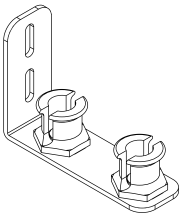
813022



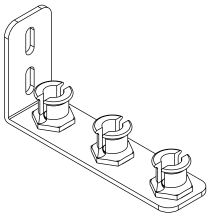
813023



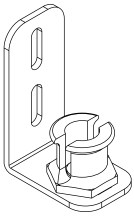
813031



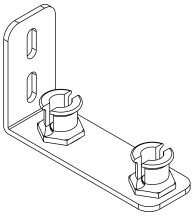
813032



813033



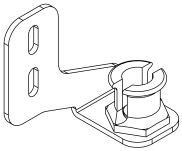
813041



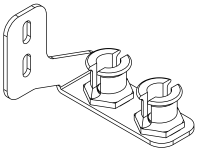
813042

5.2 Article overview of guide brackets

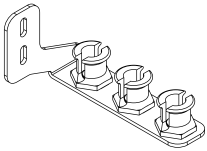
Punctiform profile guides offset Type A (guides marked on the right)



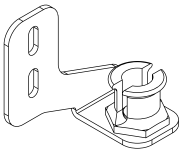
813121 right
813221 left



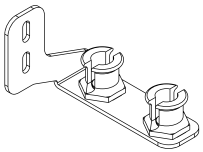
813122 right
813222 left



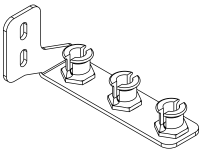
813123 right
813223 left



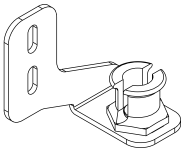
813131 right
813231 left



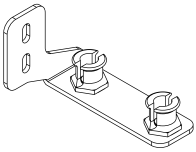
813132 right
813232 left



813133 right
813233 left



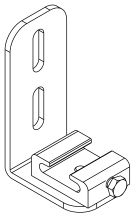
813141 right
813241 left



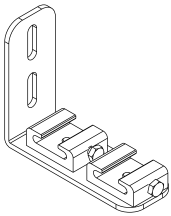
813142 right
813242 left

5.2 Article overview of guide brackets

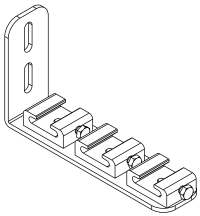
Continuous sliding guides Type B straight



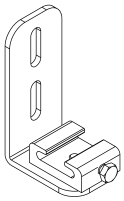
814001



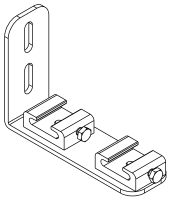
814002



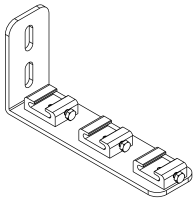
814003



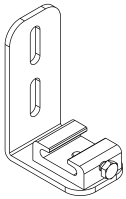
814011



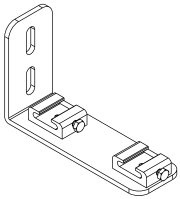
814012



814013



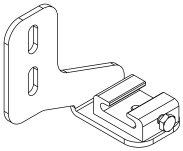
814021



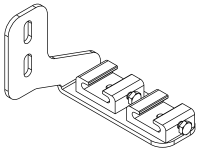
814022

5.2 Article overview of guide brackets

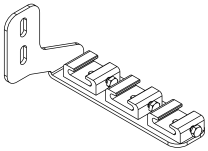
Continuous sliding guides Type B offset (guides marked on the right)



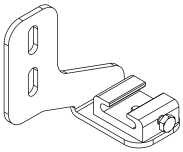
814101 right
814201 left



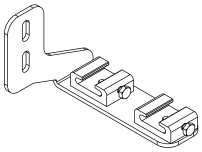
814102 right
814202 left



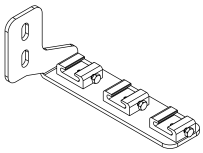
814103 right
814203 left



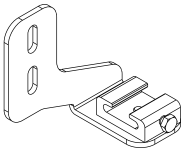
814111 right
814211 left



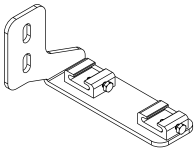
814112 right
814212 left



814113 right
814213 left



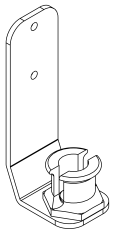
814121 right
814221 left



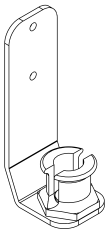
814122 right
814222 left

5.2 Article overview of guide brackets

Double shutter guides

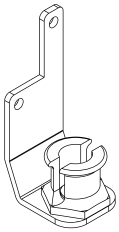


813010



813012

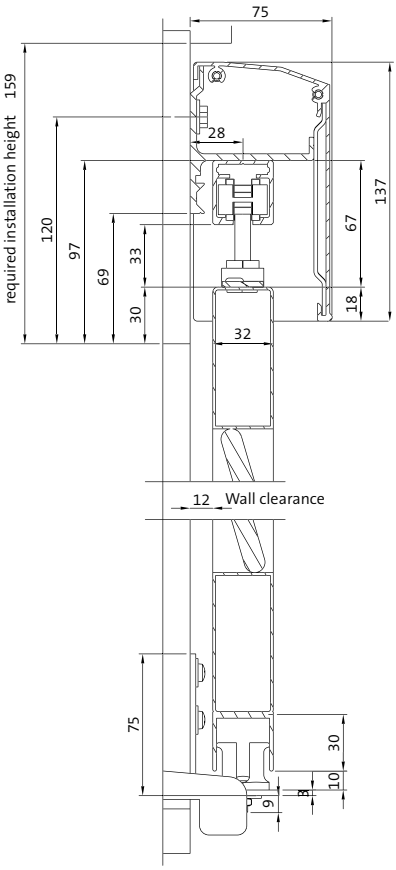
813011



813012

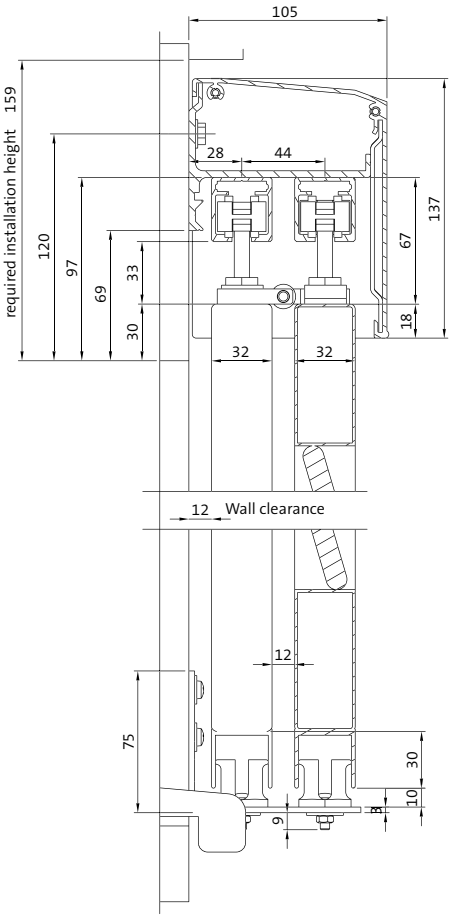
6. System cross-sections

System A75/60 BT32 Type A



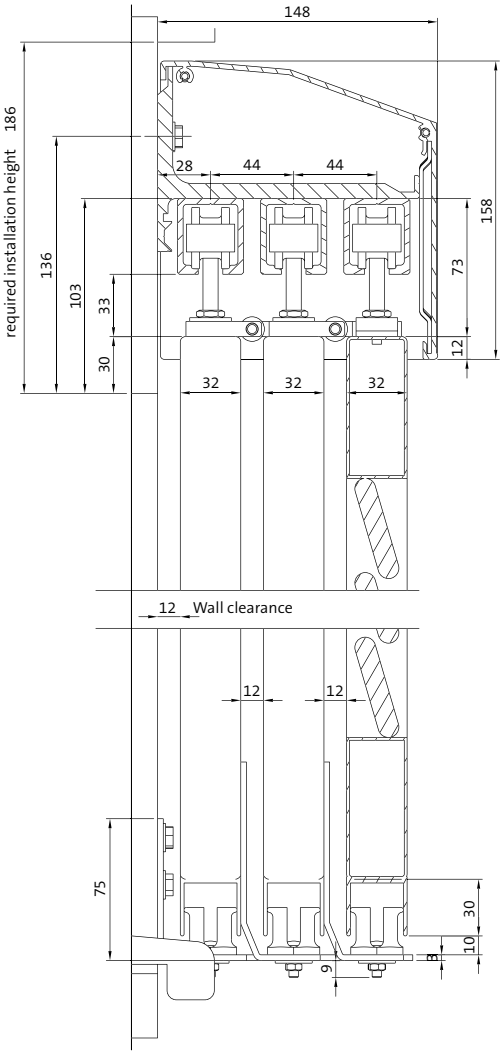
6. System cross-sections

System A105/60 BT32 Type A



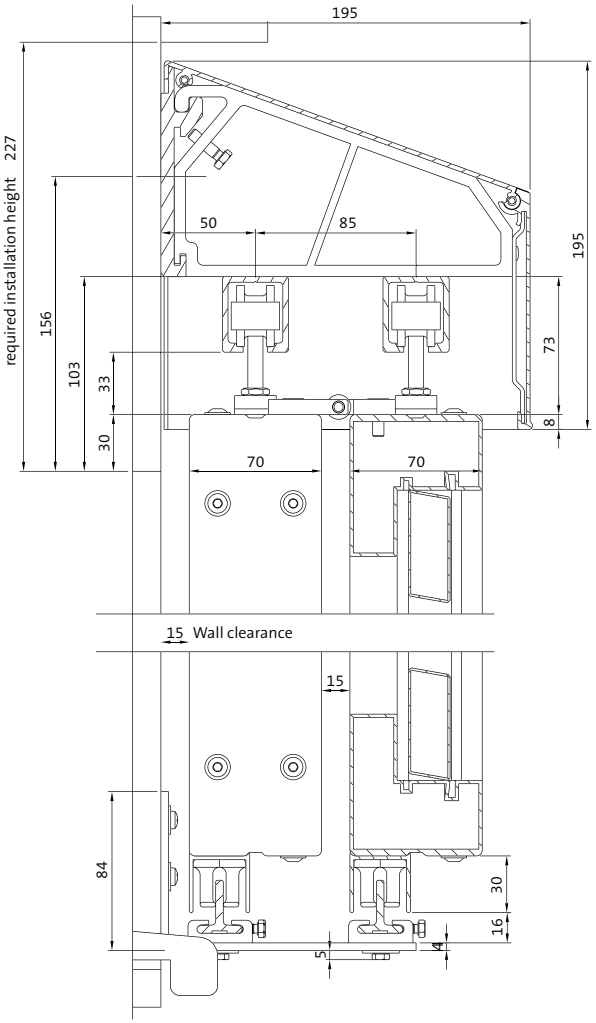
6. System cross-sections

System A148/100 BT32 Type A



6. System cross-sections

System A195/100 BT70 Type B



EHRET GmbH
Aluminium Shutters

Bahnhofstrasse 14 - 18
D-77972 Mahlberg
Tel. +49(0)78 22/439-0
Fax +49(0)78 22/439-116
www.ehret.com